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VIEWPOINTS/CONTROVERSIES

Economics of education

Stephen P. Heyneman

OPEN FILE

Education and culture

TRENDS/CASES

Antoine S. Bailly

Reiko Yamada



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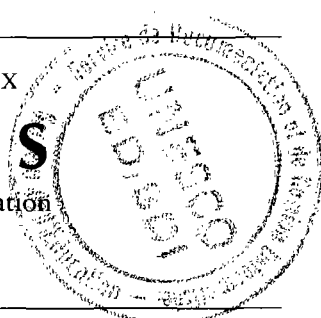
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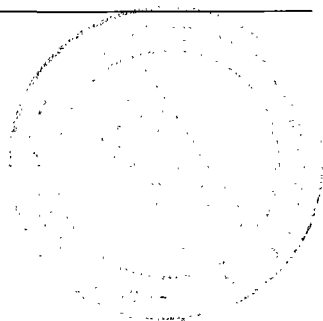
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EDITORIAL



The role of culture in the process of social development, and thus in educational strategies, is acquiring different characteristics compared with the past. It no longer deals simply with the function of the cultural dimensions of development, some of which are indeed very important, but incorporates multiculturalism and interculturalism as important features in *all* societies. The spread of the phenomenon of multiculturalism has been the result of various factors. Some of them have been the subject of relatively profound studies (migration, the globalization of the economy, the technological and information revolution, for example); others, on the other hand, are more complicated and are found in different forms according to particular social contexts: changes in life-styles, a better understanding of individual differences, an improvement in the domain of individual choice and alternatives.

A better understanding and respect of differences has led to a crisis in traditional forms of social cohesion based on the acceptance of a single and dominant cultural model. However, experience over recent years has demonstrated that the breakdown in traditional forms of cohesion does not automatically lead to the respect of differences, to tolerance and to solidarity, but rather more frequently means the break up of the community, seeking refuge in restrictive cultural identities and the collapse of any possibility of living together in harmony.

In this context, what is the role of education? In reply to this question, G.R. Teasdale and A. Little have co-ordinated the preparation of this edition of *Prospects*, which is devoted to an analysis of the relationships between the dominant culture and indigenous populations. This analysis helps us to understand not only the specific cases mentioned in this selection but also the general problems which arise when different cultures meet.

In the section 'Viewpoints/Controversies', Stephen P. Heyneman analyses a key aspect of current educational debates: the discussion on the economy and educational economists. In recent years, these discussions have exerted a major influence on the decision-making process. In the present context of a scarcity of financial resources for education, the decisions proposed by economists have

resulted in major confrontations with other partners in the educational process, not least the educators themselves. Heyneman sums up the situation, not only on the basis of the outcomes of research on the economics of education, but also concerning the arrogance with which these outcomes have often been presented. A greater degree of modesty should be an important characteristic of scientific and political rigour in the economics of education.

To complete this edition, two articles, one on geography teaching and the other on the subject of women in Japanese higher education, represent significant trends and cases in the change process of modern education.

JUAN CARLOS TEDESCO

VIEWPOINTS/CONTROVERSIES

ECONOMICS OF EDUCATION:

DISAPPOINTMENTS AND POTENTIAL¹

Stephen P. Heyneman

Introduction

Research on the economics of education has developed along two broad lines. The first draws upon the theory of economic growth to assess the contribution that education has made to output in modern economies. The second has employed analytic methods based on micro-economic theory to examine the effects of investments in education and training on the size and distribution of individual incomes and to suggest ways in which the efficiency of the education process might be improved. This paper is concerned only with the second of these two research traditions.

The second line of research has been directed at teachers, school officials and education ministers on the grounds that it would help them formulate policy and make investment decisions. But the bulk of the economics research has been superfluous to making educational decisions. It has over-emphasized rates of return to

Stephen P. Heyneman (United States of America)

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expansion by level, and under-emphasized the economics of educational quality, new subjects, target groups, teaching methods, and system reforms. It has virtually ignored the dependency of one part of the education system on other parts, for instance the essential contribution made by secondary and higher education to the quality of basic education. When dealing with vocational education the economics literature has followed a traditional misspecification now three decades old. When discussing the equity of participation in higher education, the research has appeared gratuitous in nature, for it has continued to offer recommendations on a problem which has been solved by no nation, rich or poor, capitalist or socialist. To complicate matters further, it is common to find disparaging references in the economics literature to the education community and to educators, as if reluctance to embrace the economic evidence being presented was a sign of irrational conservative behaviour. These remarks persist in spite of the fact that the evidence itself derives from supply-driven questions originating within academic economic traditions.

However, the demand for sound economic decisions in education is on the increase. School systems confront similar challenges, and will therefore require similar types of new analyses. These include: economic benefits of new curricular programmes, managerial innovation, and policy shifts. New analyses should entail a quantum jump in case studies and small samples of economic performance based on questions in demand from the education community itself. The future health of both communities will depend upon an improving relationship between them. To that end, this article proposes a 'code of conduct' for education economists and for educators to follow. The result could be an era of new innovation in educational economics involving new techniques to respond to new questions, relevant to new theories and new practice.

Background

In July a member of the Allegheny, Pennsylvania, school board told the National Education Association that 'there are two words which are electrifying the industrial world. Those words were "scientific management", and they contained a "message for every teacher".' If 'teachers did not voluntarily take steps to increase their efficiency, the business world would force them to do so.' The year of that statement was 1911 (Callahan, 1962, p. 100).

A half century later, large-scale survey techniques provided James Coleman et al. (1966) and Christopher Jencks et al. (1972) with the means to make similar arguments, only on more scientific grounds. Schools were characterized as inefficient and ineffective, and therefore required radical restructuring. Then it was argued that these findings from the United States of America were typical of the rest of the world, including those from developing countries (Simmons & Alexander, 1978). Fifteen years later, despite mounting evidence to the contrary (Heyneman, 1975; 1980a; Heyneman & Loxley, 1983), the terms of debate

remain unchanged. According to Hanushek: 'There is no systematic relationship between school expenditures and student performance,' and 'these findings are not being greeted with enthusiasm by educators because it has clearly indicated that their current operations are inefficient and broadly ineffective' (Hanushek, 1994, p. 5). And again, as before, there are rebuttals (Hedges, Laine & Greenwald, 1994*a*; 1994*b*; Kremer, 1995).

That the debates in the economics of education appear both repetitive and full of confrontation once caused Russell Davis to remark that he felt:

like Rip Van Winkle, who woke up after a forty-year sleep and found everyone else still sleeping. Though most papers have a section which looks to the future and volumes end with an 'agenda for the future', most events are out of date; theoretical material is vintage; and the topics and models and methods are not what administrators or managers talk about, or talk about doing (Davis, 1985).

Davis' criticisms apply particularly to the economics of education in 'developing' countries. But the field in general has been slow to ask the questions whose answers are necessary for educators to run education systems better, and has been quicker to ask questions generated by concerns within the academic economics community. Questions coming from the education community tend to be driven by the increase in expectations for educational excellence across many new and competing dimensions in an environment of stagnant or declining resources. Questions in the latter category tend to emerge from the abundant supply of economists employed in university and development agency settings. The mismatch between supply-driven and demand-driven questions continues to be a source of tension. Economists sometimes assert that educators ignore 'the evidence'. Educators assert that agency and university-based economists have evidence but on the wrong questions.² It is hoped that this paper may begin to clarify these differences and help ameliorate them.

If one excludes the macro-lines of inquiry into human capital—the contribution of education investments to general economic growth and to the alleviation of poverty—then the evidence commonly used for guiding educational strategies generally falls into three categories: (i) returns accruing from additional years of 'exposure' to schooling broken down by 'horizontal' levels; (ii) the internal efficiency in the use of educational resources; and (iii) comparisons of ratios of students at elite levels with their representation in the wider population. In terms of policy advice, the results from these types of inquiry over the last twenty-five years have basically elicited the following generalization:

Primary education is a better investment than secondary or higher education. 'Academic' generalizable skills are better investments than 'vocational' skills. School systems are not effective in allocating and using resources. And as a result of biases in who attends, higher education should be priced more highly and students from impoverished backgrounds should be protected, through loans with subsidized rates of interest (Psacharopoulos, 1973, 1981, 1985, 1987*a*, 1987*b*, 1995 forthcoming).

The general lines of evidence and the resulting policy conclusions have been discussed extensively at international conferences and have emerged in the strategy statements of many national and international agencies over the last quarter century. So frequently have they been repeated that some suggest they 'have a life of their own' and emerge as conclusions before evidence is gathered or reported (Plank, 1993, p. 100).

Few would argue that these conclusions have no general merit. Few would question their 'political correctness'. Who would oppose universal compulsory education? In spite of this, such recommendations are not universally acclaimed. To understand the reasons for this hesitancy, it is necessary to discuss each type of evidence: the evidence which purports to answer the question 'in what to invest'; and the evidence which purports to answer the question on the equity of those investments. First, we will argue that the lion's share of this evidence is used to ask questions which are superfluous to the better management of education. Then we will turn to some of the newer lines of argument in the economics of education that are in demand by those who make educational decisions. Last, we will propose a brief list of principles on which to build a 'code of professional ethics' within the economics and education communities, and so perhaps to reduce tensions and misunderstandings.

Four categories of educational investment questions

The economic questions which emerge from teachers, school directors, and district and state education administrators typically fall into four general categories. *The first* has to do with horizontal quantitative expansion—for example, the returns to new investments from a higher proportion of the age cohort attending post-secondary education.³ *The second* has to do with general improvements in quality—for example, the benefits deriving from a new series of textbooks, or new geography lessons on interactive CD-ROM disks. *A third* has to do with new vertical investments—those which may lead to new programmes of professional preparation (for a medical instrument technician or for a computer security technician, for instance); new specially-targeted education programmes (primary and secondary education for the disabled, for instance). *The fourth* category has to do with the economics of policy reform—the costs and benefits associated with a change in examination policy, a shift to the private provision of educational materials, a new mechanism to license teachers. There is one additional category of question, which crosses each of the four, and this has to do with the equity of utilization—the proportion of those from impoverished or underprivileged sections of the population able to benefit from the new investment. Each of these questions seems compelling. But the facility by which the economics profession can respond is very different, either because of technical shortcomings or because of disciplinary disinterest, or both.⁴

General investments in horizontal expansion by educational level

When using rates of return to marginal differences in 'exposure' to schooling as a guide to public financing policy many problems have to be confronted.⁵ Aside from the well-known theoretical problems (Benson, 1978; Bennell, forthcoming (a), 1995a), it has proven very difficult to incorporate in-kind earnings accurately into the calculations, hence biasing comparisons of results across different labour markets (Cann, 1982, p. 67). Results have been surprisingly sensitive to different estimation techniques (Cohn & Hughes, 1994; Eckaus, 1973). Nor has there been much progress incorporating student responsibility and effort, or classroom conditions into the models, in spite of the fact that these factors are critical determinants of the 'opportunity to teach' (Killingworth, 1993).⁶ Some of the evidence is contradictory to the traditional generalizations (noted above), giving rise to the impression that the generalizations themselves are influenced by the investigators' predetermined attitudes of what to expect.

For instance, returns to higher education or vocational education have been found to be greater than elementary education in Pakistan (Guisinger, Henderson & Scully, 1984); Brazil (Tannen, 1991); Botswana (Hinchliffe, 1990); China (Min & Tsang, 1990); Turkey (Tansel, 1994); and Greece (Kostakis, 1990). How common are these exceptions? Bennell (forthcoming (b), 1995b) argues that in only one-half of the cases is the rate of return to elementary education higher than secondary or post-secondary levels. Why secondary, higher and vocational education should have larger economic returns than primary education under these circumstances is not clear.

What is clear is that rates of return by horizontal educational level are inversely associated with differences in access (Cline, 1982; Jain, 1991). This assumption biases comparative rate-of-return figures across countries with divergent enrolments.⁷ Without controls on the proportion enrolled, it may not be accurate, for instance, to compare rates of return to basic education in Chile with basic education in Malawi. Similar biases occur within countries, such as India and Brazil, where level of access varies considerably from one region to another. Historical studies examining reasons for expansions of basic schooling have shown the importance of motivations other than economics (Fuller & Rubinson, 1992; Mitch, 1992), one principle reason being the fact that, over time, it is normal for the educational experience to become a 'tradition' (Shils, 1981; Heyneman, 1972a).

Rates of return to educational level tend to ignore the fact that, as in a health or agricultural system, the efficiency of one level is dependent upon the others. Some are obvious, direct and mutually reinforcing, such as the quality of post-secondary teacher training which influences the quality of basic education. Others are not so obvious, such as educational assessment as a means of feed-back; or the contribution of higher education to effective education management and to good governance in general. Still other linkages across levels are indirect and pernicious.

For instance, when technical education is used as a means to ration higher education, it results in a distortion of internal resources, so serious that it affects the ability to finance basic education adequately. Each of these implies that investment decisions concerning one level cannot easily be isolated from investment in other levels. For this reason many educators regard the evidence on rate of return by level as interesting but superfluous to making sound managerial decisions.

The non-monetary-in-kind benefits from basic education are considerable—better health practices, reduced family size, improved household management, etc. But are the non-monetary benefits from basic education higher than those from other levels of education? There are public good benefits as well—a more literate and aware citizenry, for instance. Though there have been attempts to assess the strengths of the non-monetary benefits, as yet, there is no acceptable means of comparing those which result from different levels of education. Nor is there an acceptable means to quantify relative strengths of public goods by educational level. As Rivlin pointed out thirty-five years ago, higher education is, in part, a public good which provides new research, new products and the preservation of culture. The benefits may very well be higher for the society than for the individual, and the benefits are not amenable to a common currency. ‘No one has yet developed a method for estimating the total return that society is getting or might get on its investments in higher education’ (Rivlin, 1961, p. 137).

Participation in higher education

But what about the equity argument? Is it not true that places in higher education are inequitably distributed? Do not children of the wealthy attend in higher proportions, and should not that help determine higher education investment strategies?

The answer comes in two parts. The first has to do with providing equality of educational opportunity in pre-university education. The definition of equality of opportunity has been the subject of wide debate, but the essence can be reduced to having the opportunity to utilize equal educational resources (Heyneman, 1980*b*). *If* such equality is provided, then the second part of the answer becomes pertinent,⁸ suggesting that it is not necessarily true that public investment in higher education should be lowered because there is an inequality of participation.

By tradition, the question of over- or under-representation in higher education is first approached by making inquiries as to the social origins of the student population. Anderson was among the first to calibrate this by asking a random sample of Oxford and Cambridge university students about the educational attainment of their parents and the occupations of their fathers. He then compared the results to the estimated percentages in the population at large of the generation with university-age offspring (Anderson, 1952; 1956). Over the last forty years there has been a wealth of new material gathered on the question of representation. Studies have included the United Kingdom (Halsey, Heath & Ridge, 1980), France (Milot, 1981), Germany (Craig, 1983; Williamson, 1977), and many other

countries of the Organisation of Economic Co-operation and Development (OECD) (Passeron, 1979; Busch, 1975). Surprisingly, there has been a long research tradition on social representation in higher education in the USSR (Dobson, 1977, 1980; Anderson, 1977; Jones, 1978). And there is a long line of inquiry on the same question in lower-income countries beginning with Ceylon (Strauss, 1951), Ghana (Foster, 1965; Peil, 1965; Weiss, 1979); Kenya (Prewitt, 1974); the Republic of Korea (Snodgrass, 1977); China (White, 1981); Colombia (Selowsky, 1979); Malaysia (Merriman, 1979); and many others. Early surveys focused on students' social origins; later surveys gathered information from household populations about educational attainment, thus permitting generalizations about social representation *ex post facto*.

Findings have been used to justify the policy changes in educational finance, the targeting of public assistance (often through loans) to those with lower socio-economic backgrounds, and a shifting of public investments away from higher education toward lower levels of education. This re-allocation has traditionally been justified on the grounds that higher education participation is imbalanced toward those of higher social origins and therefore that the benefits of higher education constituted a perverse cross-subsidy from those who are poor to those who are rich (Hansen & Weisbrod, 1969; Moor, 1982).

Disagreements over whether disproportional representation in higher education in fact 'hurts' the poor have been present from the outset (Pechman, 1970, 1972), but equivocal results in the eyes of the education community are not the main problem. The main problem is the absence of any study concluding that participation was sufficiently equitable. Since imbalance is universal, the question which arises in the minds of educators is what constitutes a 'normal' or 'acceptable' degree of imbalance?

An answer to this question does not seem to emerge even when one looks at trends over time, and even in countries known for having strong admission policies favouring those of lower socio-economic status. The student population attending universities in the USSR, for instance, has not changed significantly since the 1930s. In 1939, university students from professional backgrounds were 2.4 times over-represented in Soviet higher education; in 1970 they were 2.1 times over-represented. University students with professional backgrounds were over-represented in France by a factor of 2.8 in 1950, and by a factor of 2.4 in 1965. In the United Kingdom, students with professional backgrounds were over-represented by 2.6 in 1961 and by 2.4 in 1979; in Japan by 2.4 in 1953, and by 1.8 in 1968; in Hungary by 3.1 in 1931 and by 3.2 in 1963. Even in the United States, with higher rates of post compulsory educational participation than for those other countries on which there are data, students with professional backgrounds were over-represented by a factor of 2.4 in 1920 and by a factor of 1.5 in 1954 (Anderson, 1983, Table 8).⁹

From the point of view of the education community, and most particularly, a minister of education, the economic research on equity in higher education may have reached a point of diminishing returns. No one would argue against the

proposition of encouraging and subsidizing low-income students. One finds that such programmes are common around the world. But equity policies in higher education are not free of cost. And since there is no precedent for obtaining equity of participation, there is no economic guidance on how much a society should invest in it. Is over-representation of students with professional backgrounds by 100% acceptable? Higher education in France, the United Kingdom and Japan demonstrates such levels, even after considerable efforts towards amelioration. Such high levels of inequity did not seem to prevent the economic development of these countries. What about low-income countries? What would be the economic benefits if a country achieved an improvement in the social representativity of higher education? Or, more realistically, what might be the economic benefits for improving one category of an under-represented social group—say lower socio-economic status groups—as opposed to females, rural residents or indigenous peoples? The economics of education literature is comparatively silent on the issue of off-setting target groups though it has long been known that an increase in the proportional representation of one group may diminish the representation of another (Galanter, 1984; Heyneman, 1980*b*; Klitgaard, 1986; Tzannatos, 1991).

The point is not whether countries should cease from trying to insure an equality of opportunity. Social justice is sufficient rationale (Rawls, 1971). Rather, the point is that recommendations concerning the distribution of higher education places are based on values. There is little economic evidence to suggest what returns might be expected from a shift in the proportion of under-represented students in higher education from X to Y. This may help explain why ministers of higher education and university presidents appear impatient with the traditional argument for lower public investment in higher education on the grounds that there is inequitable participation. Lower public investment in higher education may be justified on grounds other than equity. But since administrative mechanisms for instituting loan schemes are non-trivial, and because there are many ways to raise the private costs for obtaining higher education (Colclough, 1990), university managers are justified in questioning the logic of the equity argument for lowering public higher education investments. 'Whatever might be the merits of introducing a loan scheme to encourage more students from needy families,' Eisemon and Salmi point out, 'under circumstances of more cost-recovery, student loans cannot be regarded as a policy instrument that is likely to increase equity in participation in higher education' (Eisemon & Salmi, 1995, p. 3).

Given these problems with the traditional economic evidence on the expansion of education by level, how is a society to decide on what to invest—whether to invest more in one level or another? There are extreme cases, of course, where the numbers attending basic education are minuscule, and its priority is obvious. But these instances are increasingly rare in the world, mostly limited to sub-Saharan Africa and some parts of South Asia. In general, the decisions are more complex because the institutional requirements overlap. More textbooks are needed for elementary education; more opportunity for higher education is needed simultane-

ously. Since economic science is too weak to support an unequivocal position, other mechanisms must be used.¹⁰ What are they?

In Gutman's view, the economic case for subsidizing higher education does not depend on establishing its greater empirical urgency over other public or mixed (public and private) goods. It is justifiable for governments to subsidize any good which is at least partly public. Since there is no acceptable economic evidence which can determine the investment choice between educational levels, governments should subsidize higher education in the same legitimate manner in which all difficult choices have to be made—investments in police protection, public health, defence. Beyond what social justice would require for compulsory education, the decision on higher education should be made on the basis of democratic deliberation and decision-making at the appropriate levels of government (Gutman, 1987, p. 230).¹¹ Gutman reminds us that, in a democracy, whenever there is insufficient empirical evidence to answer a question conclusively, the highest authorities in determining public policy are representatives elected by the voters. And if they choose to subsidize higher education, there is no evidence strong enough to suggest that this is a mistake.

Investments in education quality

The second category of educational question has to do with the economics of educational quality. Quality issues are commanding increasing interest (Behrman & Birdsall, 1987; Card & Kruger, 1992; Harbison & Hanushek, 1992; Heyneman & Loxley, 1983; Kemmerer & Wagner, 1985; Moll, 1991, 1992; Solmon, 1985, 1987). However, with the exception of Behrman and Birdsall and Harbison and Hanushek, few have tried to compare the returns to an improvement in educational 'quality' to an improvement in educational 'quantity', though that question is a natural one to ask. Nor is an aggregate figure on the returns to 'quality' of much interest on its own, when the real issue is what kind of quality, in what amount, and with what corollary investments and institutional requirements?

School administrators are faced with decisions on specific cost/effectiveness quality-improving investments and various trade-offs. What they want are guides to specific investment choices. It is true that the economics literature is making advances. For instance, it appears that attending an 'elite liberal arts college' is a good investment (Fox, 1993). So is a foreign (as opposed to a domestic) degree in low income countries (Lee, 1982). Economists have attempted to calculate the returns on computer-assisted instruction (Levin, 1986); magnet schools (Chabotar, 1989); various science degrees and the level of qualification (Lakshmanasamay & Madheswaran, 1983); smaller learning-group sizes (Bacdayan, 1994; Kemmerer & Wagner, 1985); 'active' learning and other pedagogical characteristics of specific schools (Glewwe et al., 1995; Landgren, 1993); textbooks and radio-assisted instruction (Jamison et al., 1981).

What can we learn from the literature on how important an investment in quality compared to an investment in something else is? What are the complemen-

tarities and interdependencies across various quality-improving investments? To whom should quality-improving investments be targeted? To the gifted? To the handicapped? The same for every subject and every grade level? Differently in different grade levels or in different subjects? Simply knowing that better books are a cost-efficient means of raising average science achievement is insufficiently interesting if educational managers are being held responsible for achievement across a wide variety of interdependent inputs, and for products which reach well beyond academic achievement in science—moral values, moral behaviour, and a common sense of citizenship (Young, 1983; Dewey, 1956, p. 18).

Two generalizations might be made about the status of the literature on the economics of educational quality. First is that the literature is more abundant in OECD countries, hence more useful to educators in OECD countries. By 1991, there were about 100 quantitative studies on the economics of school resources in developing countries, but there were four times that level available in the United States alone (Hanushek, 1995, p. 229). There is a gap in sophistication as well. The economics literature still has a long way to go before it is adequately able to specify the complexity of the teaching and learning circumstance. There is nothing unusual or wrong in this inadequacy. Economics is more successful in estimating production functions when there is a single product (e.g. rice), and when the influences on productivity are physical. The difference between a classroom and a farm is that soils do not depend upon motivation. What this implies is that a tone of humility would be in order when discussing results.

Vertical investments in specific curricula and specific abilities

Facing most educators are three kinds of variables which must be factored into the 'vertical investment decision': the first is the interest of the learner; the second is the learner's ability; the third is the institutional and managerial prerequisites for success. Here one might draw on work on the economics of high and low achievers in Norway (Bonesronning & Rattso, 1994); on the returns to those with disabilities who invest in college (Dean & Dolan, 1992), or the effect of having a 'co-operative work environment' (Min & Tsang, 1990). But, in general, the interest in this category of investment decision has been sparse. What is the economic evidence on the proper 'vertical track' for those with attention deficit disorder? For those with more advanced spatial ability? For those preparing for new specializations in medical technology?

Scarcity of economic evidence is not the only problem though. Equally serious are economic arguments with insufficient understanding of curricular principles. One example is the common method of casting the question of vocational versus academic education as if it were a binary trade-off. Foster (1968) intentionally framed the first discussion in this manner almost thirty years ago in order to provoke a debate in the United Republic of Tanzania. The purpose was to 'shock' the audience out of a long-held misconception that vocational education was more

'practical'. To be sure, challenging the assumption that manual experience was therefore 'more practical' has been an arduous process (Heyneman, 1972*b*, 1979, 1985, 1986, 1987), but one which is now concluded. Three decades later, on the other hand, the issue of 'vocational education' continues to be cast by some as though it were a binary choice (Psacharopoulos, 1987*b*).

Of course, many noteworthy economists have given fair warning. Blaug (1985) points out the 'blurred' differences between vocational and non-vocational skills, as does Schultz (1975), and Hanushek (1981). Kang & Bishop (1989) ask whether vocational education is not complementary to academic education. Freeman argues that 'there is a substantial and growing body of evidence that, contrary to traditional views of student decision-making, young persons are highly sensitive [. . .] to the state of the labor market. For a wide variety of fields ranging from law to physics to psychology to accounting' (Freeman, 1989, p. 21). Bowman points out that literacy was once classified as a vocational skill (Bowman, 1990). Dougherty (1989) argues that vocational preparation includes the teaching of applied sciences in electronics. Kostakis argues that preparing for the university entrance examination in Greece constitutes vocational education, but that which is labelled vocational education in Greece has a 'large generalized component' (1990, p. 399). Lewis, Hearn and Zilbert argue that office keyboarding is a generalizable skill (1991, p. 333). After reviewing thirty different British studies, Drake (1982) argues that vocational training 'has so many different independent categories of result, that the only proper use of them is as "conditional information", not a categorical guide to investment.' Bowman (1990) refers to this tendency to misspecify vocational education as a 'wide-spread failure of communication [. . .] in which those most deeply involved in assessment of "diversified education" are least enthusiastic about such policies.' Dougherty (1989) says that the debates over vocational education are 'bedevilled by the failure on the part of both advocates and critics to clarify what is meant by "it".'

The problem of generalizing about vocational education has been highlighted by the recent report of the United States National Academy of Sciences, which points out that the international classifications about what vocational education means, now many decades old, are seen as 'outdated and culture bound' (National Academy of Sciences, 1995, p. 27). If this is correct, then much of the literature which attempts to judge the economic returns to binary concepts of vocational education is simply null and void. It is the misspecification in the economics literature about vocational education which appears to have caused Fay Chung, then the Minister of Education of Zimbabwe, to declare that the research work economists have done on vocational education as being 'very narrow' (Chung, 1989). Chung labels this work as 'narrow', correctly in my view, because it illustrates a surprising absence of understanding of the principles on which students choose and educators design educational programmes and invest in them.

Educational programmes are designed according to curricular principles established in the field of human psychology. Among them are the defining and sequencing of skills and principles, the interaction between theoretical practice and

practice through manual or observational means, and the targeting of educational experience differently in different age, ability and interest groups. In terms of specific curricula, plumbing is not the same as carpentry, and fish culture differs from agriculture. Investments are made in curricula differently and, if aggregated across these differences, results are not helpful either to those faced with making investment decisions, or to those faced with making managerial decisions. It is not helpful to know that the economics literature reports that the returns to 'vocational education are low' when what a student living in a suburb of, say Cairo, wants to know is whether or not to study horticulture.

Investments in policy change

The fourth category where an educational investment may elicit an attractive benefit is in the field of policy change. In the education profession, policy change is the equivalent of a 'bull market'. The interest expressed in educational policy knows few international boundaries and is in demand virtually everywhere: merit pay, examination policy changes, vouchers, time on task, performance standards (Heyneman, 1993a; 1993b). In each instance, the question being asked is the degree to which one can anticipate economic benefits—greater internal efficiency, more effective distribution of resources—attributable to a change in policy.

Some pioneering attempts have appeared in response to this demand. This seems particularly true on questions having to do with the allocation of teacher and teaching time (Bacdayan, 1994; Brown & Saks, 1987; Fisher, Marliave & Filby, 1979); student time (Levin & Tsang, 1987); cost-recovery strategies (Tilak, 1995); strategies for teacher selection (Levin, 1970); magnet and other school configurations (Chabotar, 1989); payment-by-results and other teacher salary issues (Cox-Edwards, 1989; Kemmerer, 1990; Rapple, 1992); on-the-job pedagogy (Landgren, 1993); and over-concentration in educational markets (Borland & Howsen, 1992). But in general, the economics of policy change is in an infant stage of empirical development.

New responsibilities, new questions

That economic analysis has failed to answer many of the professional's questions has not gone unnoticed (Burkhead, 1973). One report in *The Economist* pointed out how inaccurate human capital predictions have been when the definition of 'literacy' remains so subjective, and the meaning of 'school attainment' so variable (*The Economist*, 1995). Killingworth (1993) raises similar concerns when he questions the degree to which earnings adequately capture differences in skill, effort, responsibility and working conditions. But misspecification may be attributable to many sources. One of them is the impoverished state of statistics necessary to make even modest educational generalizations (Heyneman, 1993a; Puryear, 1995; National Academy of Sciences, 1995; *The Economist*, 1995). Yet, regardless of the source, Samuelson (1995, p. 44) concludes that 'economic wisdom has not yet pro-

gressed to the point where desirable changes can be ordered *à la carte* [. . .] it can detect general tendencies and illuminate broad choices, but that's about it. In the end, the public is not fooled, only disillusioned.'

How then are educators to go about asking questions of the economics profession? And how is the demand for economic analysis to be measured?¹² As the health economist is required to appreciate that there are differences in the consequences and treatments between influenza and pneumonia, so too must the education economist be sensitive to the requirements of teaching and learning.

The education economist must appreciate the nature of teaching and the teaching profession (Dreeben, 1970; Cuban, 1980). The education economist must also appreciate that these are differences in age and styles of individual learning, and that there are different resource implications for different pedagogical objectives. The education economist must be able to distinguish class size from pupil/teacher ratio;¹³ between knowledge and the application of knowledge; between cognitive and affective performance; and between (Western expectations for) individual performance and (Asian expectations for) group performance.

The education economist must be prepared to consider divergent educational products and divergent educational consequences. The economist must always keep in mind that there is a danger of not fulfilling an expected educational function—in spite of the fact that such functions cannot be subjected to economic criteria. As Burkhead et al. point out, 'there is no reasonable educational equivalent to the maximization of profits' (Burkhead, Fox & Holland, 1967).

Children are not free market goods on which to experiment. In the eyes of a parent—especially a parent in a democracy—there is 'zero tolerance' for error. Educational officials are held publicly accountable for error. In general, economists are not. To be credible to the education profession, the economist must demonstrate an appreciation of the education endeavour, and a respect for the burden of public responsibility which rests on classroom teachers, school directors and ministers of education.

That many economists are not as knowledgeable or as understanding as they should be is an understatement. But it is also true that many are, and that some lines of inquiry hold out the possibility for making significant educational progress. First there are those within the economics profession calling upon their colleagues to 'get creative' about what it is they are measuring and the processes by which they value benefits. Bowman and Anderson, for instance, conceive of five separate sources of human capital development which economists should consider: (i) attachment to people or institutions through apprenticeships; (ii) families (the primary influence on moral behaviour); (iii) educational institutions; (iv) employment; and (v) oneself (Bowman & Anderson, 1976). Freeman calls upon his colleagues to become 'detectives' in the field of education (Freeman, 1989), and hence to provide a 'mixture of thoughtful data analysis and economic common sense'. Akin and Stewart (1982) remind their colleagues that education is a cumulative process and that learning achievements are a function of time allocation, ability and external resources.

True breakthroughs in the economics of education are likely to occur when economists ask the questions in demand from educators. Michael (1982) points to the work which needs to be done on motivation, psychological and physical health. Hoenack (1994) points out the need to emphasize organizational determinants of economic behaviour. Schultz has called for emphasis on different intellectual skills, perception, problem-solving, ability to translate personal challenges into the firm's goals, and the like (Schultz, 1975). Brookins (1995) has called for an emphasis on 'behavioural economics'. Eisemon may have begun to operationalize these questions in his pioneering estimate of the behaviour shift in adults stemming from a change in performance objectives on a health section of a secondary school entrance examination in Kenya (Eisemon, Patel & Abagi, 1988).

True breakthroughs, however, are unlikely if the economics community repeats past errors. One such error was to over-emphasize results which might be obtained from large-scale programme evaluations. They elicited little insight compared to the cost of their complex designs (Raizen & Rossi, 1981). Another was to rely on production function methodologies to distinguish among individual inputs to the teaching and learning process or upon new methodologies to separate out the influence of the class, as opposed to the school, the district or the region (Heyneman, 1989).¹⁴

Education economists can be more methodologically creative by placing new emphasis on case studies and small sample analyses of economic performance. In this they may take a lesson from the quite heroic efforts at gauging effects over time (Rutter, 1979; Schiefelbein & Farrell, 1982; Peaker, 1971; Hyman, Wright & Reed, 1975); in specifying cultural values which govern economic effects (Fuller & Clarke, 1994); or in producing genuinely innovative indicators which combine economic success across different categories of investments, such as quality and quantity (Caillods & Postlethwaite, 1989; Lewin, 1995).

Conclusion

As Windham and Chapman (1990) illustrate, in the end we all face the reality that we know very little about the economic effects of educational decisions and, as a result, the sector remains vulnerable. Education economics has made deeply significant contributions to our understanding of the macro-decision to invest in human capital. But the field has yet to make a significant dent in the questions educational managers raise in their day-to-day work. It must be remembered that the 'black box' of the educational enterprise is dark in the mind of the economist, but not in the mind of the educator.

As countries are asked to adhere to a 'code of conduct' when making international agreements, and doctors and lawyers are asked to adhere to similar professional standards in their relationships with clients, so too has the educator a right to expect a measure of professionalism from economists who work in the field; and economists have the same right with respect to educators. This standard might begin with three elements:

- the absence of *ad hominem* arguments about motives. For a century, remarks about the conservative or self-interested nature of the teaching profession have characterized some economic discussions. Whether or not this is an accurate reflection is not the point; the point is that it is not likely to lead to a constructive conclusion.
- the specification of assumptions behind data and conclusions. ‘Class size makes no difference’; ‘money makes no difference’; ‘educational investments are ineffective’—these are all examples of conclusions which require specification.¹⁵
- the generalization about what constitutes the field. More studies have been conducted on the first category of question—returns to quantitative expansion—, but this represents only one of the four major categories of educational investment questions. Rates of return say little about the nature of economics of education in the other three. Decisions on priorities for educational investments should not be made without a review of all four categories.

On the other hand, there are principles governing the attitude of educators to the field of economics which are of equal importance. Because education is a public good and therefore a public investment, it is natural to expect that the education profession will welcome economic questions and be among the greatest consumers of sound economic advice. It is not fair to ignore the essence of that advice on grounds that the evidence is imprecise. It is unwise to not be interested in the economic questions whose answers hold out the promise for improving education. However, the education community has a responsibility to demand better economic evidence on a wider variety of educational questions. Past questions in the economics of education were driven less by a search for insight and more by an adherence to disciplinary tradition. Both economics and education would benefit if the past questions were jettisoned in favour of the questions in demand from the education profession itself.

Notes

1. This article was originally developed with the encouragement of Dr. Lakshmanasamay at the University of Madras for a series of essays in tribute to Nalla Gounden, and it appears in *Prospects* with his permission. The author gratefully acknowledges the advice and encouragement received from economist friends teaching at the Universities of Chicago, Vanderbilt, Sussex and George Washington, and the State University of New York at Albany; from many colleagues in UNESCO and the World Bank; and especially colleagues in his own division. All gave their time most generously. However, the views are those of the author alone and, in particular, do not necessarily represent those of the World Bank or any of its affiliated institutions.
2. In the United States of America, this ‘tension’ over the lack of utility in the kinds of economic questions asked by the academic community led to the establishment of an economic society focused exclusively on the problems of education management: The American Education Finance Association.

3. 'Horizontal' investments are those undifferentiated by specialization and generally fall into the categories of primary, secondary and higher. 'Vertical' investments are those which cross horizontal lines and lead to a curriculum experience different from others. These may include: a new professional specialization or a new educational objective such as environmental awareness, physical fitness, etc.; as well as the special needs of the gifted, the handicapped and the like at primary, secondary or higher education levels.
4. By tradition, economics has been less interested in questions of technical alternatives, which have been the main lines of inquiry in operations or engineering research.
5. The term 'exposure' is employed here in order to illustrate the crudeness of economic measures on quantity. Typical units are marginal differences in years (nothing less). Little distinction is made between intended, delivered and received curriculum; and few (accurate) controls are placed on differences in the quality of educational materials, subject matter or alternative product. Hanusheck (1994; 1995) has been particularly eloquent on this point of the inadequacy of rate-of-return evidence by educational levels to guide investments without simultaneous attention to investments in the quality of education.
6. The term 'opportunity to teach' differs from ability to teach in the same way that the term 'opportunity to learn' differs from ability to learn. 'Opportunity to teach' refers to the classroom environment required before good teaching can be effective.
7. The literature on the economics of vocational education has been particularly negligent on this point. Vocational education was commonly used as a tracking mechanism to delay labour market entry, to ration higher education, or both. This is lamentable because these functions are both expensive and ineffective. Students in terminal vocational education tracks tend to be more discouraged and angry than the typical general age cohort, because their opportunities for occupational advancement have been foreclosed. The lower the percentage of the age cohort in terminal vocational attendance, the higher the returns to vocational education are likely to be. This implies that the returns to vocational education are determined less by the nature of the curriculum and more by whether it serves other intervening social functions. However obvious and important these functions may be to the local political leadership, the economics literature generally ignores them.
8. On the question of equity of the distribution of educational resources in pre-university education, the economics literature has served as an enormous resource and has provided a genuinely creative series of arguments, empirical techniques and policy recommendations.
9. The lack of corresponding dates in different countries is attributable to the difficulty of aligning shifting definitions of socio-economic status, shifting definitions of higher education in different studies, and different means of estimating the representation of socio-economic strata in the general population (Anderson, 1975).
10. Historically, we have come to refer to elementary schooling as 'primary' and to post-primary schooling as 'secondary'. Gutman argues that this distinction made sense in a society where the demands of literacy and citizenship were low. Today, high school is a necessity for adequate preparation for democratic citizenship. Since the complexities of a democracy do not differ among rich and poor countries, in reality all countries require high school education as a part of basic education (Gutman, 1987, p. 49). Only three levels are now meaningful in schooling: pre-compulsory, compulsory and post-compulsory. Though not all societies will be able to afford the same level of

access, all societies will try to have the same access objectives, regardless of the rates of return to different levels.

11. To be fair, decisions over public goods are not impervious to empirical scrutiny. Some roads are more 'public' than others. The poor tend to benefit more from roads leading to markets than from roads leading to airports. In education too there are ways to distinguish relative public weights. For example, in OECD countries public expenditures for each student in higher education are typically double what they are for each student in compulsory education. In non-OECD countries the difference is even greater. Per student higher education expenditures are three times more in Singapore, Hong Kong, Taiwan and the Republic of Korea; four times more in the Gulf States; eight times more in Latin America and the Caribbean, as well as in Tunisia; fourteen or fifteen times more in Jordan and Morocco; and as much as 100 times more in parts of sub-Saharan Africa. In cases where the quality of compulsory education has been neglected, the social justice of having lower unit expenditures would be questionable.
12. One can distinguish the degree of relevance among education economists by their demand in serving as paid consultants to those who manage education systems.
13. The economist who does not distinguish between these two concepts comes close to 'professional malpractice'. When it is argued that 'class size makes no difference', what is really meant is that the size of the pupil/teacher ratio makes no difference. The term 'class size' is very specific. It differentiates purpose of subject (school chorus vs. chemistry laboratory); pedagogical style (group lecture vs. small-group work); and learning demand (the handicapped vs. others). Pupil/teacher ratios represent a broad average across the system. It is the pupil/teacher ratio to which the economist usually means to refer. On the other hand, pupil/teacher ratios are inadequate unless there is evidence on the range of ratios being considered in the sample and differentiations between teaching/non-teaching employees.
14. It is true that multi-level analytic methods of disaggregation have represented a major advance. But it is also true that they have not been able yet to distinguish intervening influences which occur during the investment period itself. Since it is widely recognized that changes in some classrooms will be more radical than in others, current methods of measuring net gains over time would be unlikely to stand up in a court of law on the basis of being able to distribute resources 'fairly'.
15. This requirement is similar to the standards recommended by the National Academy of Sciences for conducting international research in education (Board on International Studies in Education, 1993).

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EDUCATION AND CULTURE



Illustration by Ranbir Singh, Lecturer in Art, Fiji College of Advanced Education.

EDUCATION AND CULTURE:

AN INTRODUCTION

G . R . T e a s d a l e

During this final decade of the twentieth century we are witnessing a profoundly significant movement in many regions of the world. I refer here to the re-affirmation of indigenous knowledge, wisdom and learning. Initially the movement has had a cautious and rather tentative quality, rather like a hermit crab re-emerging from its borrowed shell after a period of prolonged threat. It is growing steadily stronger, however, as indigenous groups acknowledge with greater confidence the significance of their own traditional ways of viewing the world. The papers in this special issue of *Prospects* provide examples of the movement from a variety of indigenous cultures in Africa, Asia, Oceania and South America, and explore some of the implications for education. Readers who wish to review examples from North America may wish to refer to a recent special issue of the *Peabody journal of education* (Lipka & Stairs, 1994) on the theme of indigenous schooling.

What exactly do we mean when referring to 'indigenous knowledge, wisdom and learning'? There are three elements: content, process and context. Thus, if we take a particular cultural group, we can identify:

1. The actual knowledge and wisdom that gives meaning and purpose to the life of the group, and to the lives of the individuals within it. Although this body of public and private knowledge may share content in common with that of other groups, it does have unique features that help to define the group's identity.
2. The processes whereby that knowledge and wisdom are analyzed and stored, and by which they are transmitted from generation to generation.

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3. The actual settings or contexts in which knowledge and wisdom are analysed, stored and transmitted.

The papers focus predominantly on indigenous rather than transposed cultures, for it is here that the movement has been strongest. The word 'indigenous' is used to refer to the first people to occupy a particular land or territory, and to their descendants who continue to inhabit the land and to identify closely with it as their particular place in the world. In some cases, as Sheila Aikman points out in relation to the Amazonian Indian people, the ties to the land have a deeply intimate and spiritual quality that play a major role in defining the cultural identity of the group.

Prior to the European colonization of the past five centuries, most indigenous peoples existed in relative isolation. Their systems of knowledge, and their processes of knowledge analysis and transmission, were generally stable and coherent. The arrival of the Europeans in most parts of the world, however, had far reaching consequences, for they brought with them their own languages, religious beliefs and political systems. They were certain of the superiority of their own knowledge and wisdom, and in most cases imposed it unquestioningly on those they conquered. Hence, they introduced systems of education that were based exclusively on their own processes of knowledge, analysis and transmission. Indigenous knowledge and learning were suppressed, often in quite deliberate and systematic ways. As a consequence, many indigenous groups were marginalized. Peter Gale, for example, notes that the situation of indigenous Australians has been one of exclusion from education, especially at the tertiary level. Michael Mel speaks of the annihilation of many cultures in Papua New Guinea as a consequence of the colonizers' failure to accept and understand local systems.

Belief in the superiority of the modern scientific world-view has been especially strong and pervasive. Its emphasis on certainty, objectivity, predictability and instrumental rationality has dominated the education systems introduced by the Europeans. As Capra expresses it:

In the past three hundred years [. . .] we have been driven by the belief in the scientific method as the only valid approach to knowledge; the view of the universe as a mechanical system composed of elementary building blocks; [. . .] and the belief in unlimited material progress to be achieved through economic and technological growth (Capra, cited by Beare & Slaughter, 1993, p. 57).

While these modern ways of knowing and understanding have been of great importance to the development of the human race, they also have led the colonizers to assume an inherent intellectual ethnocentrism—an intrinsic sense of the superiority of their own ideologies and value systems—that has resulted in the denigration of indigenous knowledge and its processes of analysis and transmission. However many indigenous peoples now are becoming increasingly confident in their assertion of the validity of their own knowledge and wisdom. There are several interrelated reasons for this:

1. At an international level indigenous groups are gaining increasing support for their rights. The United Nations World Decade for Cultural Development (1988–1997) and the International Year of the World's Indigenous Peoples (1993), for example, have affirmed in significant ways the rights of indigenous groups to maintain and develop their own languages and cultures. As Peter Gale emphasizes, these are not rights based on the disadvantaged status of many indigenous minorities, but on a collective right, based on their status as first occupants of a territory, to autonomy, self-management and self-determination.
2. In addition to affirmation from *without*, there is also evidence of a new sense of cultural distinctiveness and autonomy emerging from *within*. Marshall Sahlins (1993, p. 1) has coined the term 'culturalism' to describe this new sense 'cultural self-consciousness' that is developing within many small indigenous societies. He considers it one of the most remarkable phenomena of the late twentieth century. While its manifestations in some parts of the world are overwhelmingly negative, leading to bitter wars and rivalries, in other countries it is finding creative expression in areas such as music, drama and art, and in a new sense of intellectual and spiritual freedom.
3. In some countries where indigenous peoples have been a small and dispossessed minority, we are now witnessing a newly emerging sense of national pride in the unique contributions they are making to the wider society. In Canada, Australia and New Zealand, for example, despite continuing expressions of racism in some settings, indigenous perspectives are increasingly being celebrated as an integral part of the national identity of each country.
4. Finally, there is evidence that the intellectual climate in some parts of the world is changing. Underlying theoretical shifts are facilitating the acceptability of indigenous cultures of knowledge and learning. In the humanities and social sciences, for example, post-modernism is challenging many deeply held assumptions, and undermining the certainties of the scientific approach to the study of humans and their societies. In the physical and natural sciences the changes are even more profound. Quantum mechanics and chaos theory have challenged the very core of scientific thinking. The universe now is being perceived as complex and unpredictable. The rational-empirical approach, with its certainty and objectivity, is no longer fully accepted by many scholars. In fact, there is a growing belief that long-term solutions to the environmental and social problems currently confronting the human race may well depend not on scientific rationalism but on the more holistic and spiritual world-views of indigenous peoples (Teasdale, 1994).

Although the impacts of the above changes in attitudes and theories have been uneven, they are beginning to create a climate of acceptance of alternative cultures of knowledge and wisdom in education, at least in some parts of the world. This is reflected in many of the papers in this issue. Zane Ma Rhea notes how major attempts are being made to bring older local and religious knowledge back into many of the regional universities of Thailand. In this way students are being

encouraged to look at their nation's own store of knowledge and wisdom, while staff are seeking more culturally relevant teaching methodologies which recognize the importance of context-based learning. Unaisi Nabobo and Jennie Teasdale give an exciting account of a teacher education course in Fiji that draws on the content and processes of both indigenous Fijian and Fiji Indian cultures of knowledge. From an Indonesian perspective, Elias Kopong explores the implications of a new law that allows local people to develop a supplementary school curriculum for the purpose of enhancing their own particular cultural values, beliefs and practices.

It is of vital importance to note, however, that this re-affirmation of traditional systems of knowledge and wisdom is *not* a retreat into the past. It is *not* a process of putting traditional knowledge into a sterile glass case, as in a museum, and seeking to preserve it in a lifeless and artificial way. Rather, it is a dynamic process that reflects a search for cultural continuity amidst constant adaptation to the new. At times it becomes a process of appropriation, of improvisation, and of invention. It involves constant change, yet it retains the deep values of the culture, and ensures a strong sense of cultural identity.

Let me give an example. One of the contributors to this issue, Michael Mel, is currently completing a doctoral thesis. He is from the Mogeï culture in the Melpa area of the western highlands of Papua New Guinea. As a child, he was strongly grounded in the knowledge and wisdom of his own people. In writing his thesis Mel is drawing on his own indigenous store of knowledge, fusing it with contemporary Western theories and insights. He sees himself working at the cutting edge of culture change where the two cultures of knowledge—the Western and the indigenous—are in constant and creative interaction. His processes of knowledge analysis are especially interesting. The theoretical chapters of his thesis begin by telling a story that provides a context for an overview of key issues. The issues are not separately identified and dealt with sequentially. Instead he approaches his research question by 'walking around it' in ever decreasing circles. At various stages other stories are told to clarify and explain. His approach to knowledge therefore is holistic rather than compartmentalized. He makes use of the oral literature of his own people, as well as drawing extensively on Western literature and theories.

Essentially, Mel is engaged in a dynamic process involving the creation of new knowledge out of the interaction of the Western and the indigenous. Yet his work also reflects a constant search for cultural continuity and identity. We see the same processes at work quite vividly in Aboriginal Australia, especially in the areas of art and music. One particular music group, *Yothu Yindi*, from Yirrkala in north-east Arnhem Land, has received worldwide acclaim for its music. Led by Mandawuy Yunupingu, a university graduate and principal of the local Community Education Centre, the group is creating lyrics that are a vibrant blend of traditional Aboriginal and contemporary popular music. When one listens to the lyrics, one cannot separate out the Aboriginal and the popular. They are a fusion of the two — a new creation — a new form of music. Yet for the Aboriginal

people the music has a deep continuity with the past, affirming their unique cultural identity.

Edna Tait's paper provides a fascinating account of how a large secondary school has been able to create new approaches to school management, curriculum development and classroom instruction from the fusion of Western (Pakeha) and indigenous (Maori) cultures of knowledge and learning in Aotearoa New Zealand. Kurt Seemann and Ron Talbot explore the interface between the holistic thought processes of Aboriginal people in the central desert of Australia, and the delivery of modern technical education. Their paper gives a remarkable example of the synthesis of these seemingly antithetical processes. Even in China, where the education system has been slow to respond to indigenous learning needs, there is now evidence of attempts to fuse local and national perspectives, as Keith Lewin shows in his account of the Yi people of Sichuan province.

What of the future? Clearly the re-affirmation of indigenous knowledge, wisdom and learning has developed considerable momentum. Several of the papers in this issue provide evidence that the movement is starting to lead to more holistic, interdisciplinary and even metaphysical approaches to knowledge analysis, and to modes of knowledge transmission that are more learner-directed, person-oriented and contextualized. However the movement can be further strengthened in at least two ways:

1. There needs to be continuing, careful description of indigenous systems of knowledge, wisdom and learning. Thoroughly researched ethnographic and sociolinguistic accounts like those of Sheila Aikman, Avinash Singh, Elias Kopong, Pat Pridmore, Konai Thaman and John Lowe provide an important data base for ongoing comparative analysis and synthesis. Hopefully the documentation and dissemination of accounts such as these will lead to a deeper understanding and acceptance of indigenous cultures of knowledge by non-indigenous educators. This is not easy to achieve. At least half of us who have contributed papers to this issue of *Prospects* are non-indigenous and, despite our best intentions to write in culturally sensitive ways, many of our perceptions and representations remain those of 'outsiders'.
2. There needs to be strong and continuing recognition of the rights of indigenous cultures to ownership and control of all aspects of the education of their people. At the Rarotonga seminar in 1992, for example, indigenous participants from Oceania recommended that they should have full control of education, including administrative and resource decisions, and that there should be an 'absolute guarantee that no veto be exercised by any other cultural groups' (Teasdale & Teasdale, 1992, p. 6). This also implies that indigenous scholars and educators must have the freedom to create their own modes of knowledge analysis and transmission out of the interaction between their own cultural traditions and those of the West. Such processes cannot be imposed by others. They only can be generated from within. The most useful role outsiders can play is to discard any belief they might hold in the superior-

ity of their own knowledge and wisdom, and to affirm the validity of indigenous ways of thinking and knowing.

We hope the papers in this special issue of *Prospects* will inspire indigenous peoples in all parts of the world to continue affirming the importance of their own systems of knowledge, wisdom and learning, and to continue exploring the dynamic fusion of their systems with those of modern industrial and post-industrial societies. We hope, too, that non-indigenous educators will come to recognize the significance of indigenous perspectives for the survival of the human race, and begin to incorporate these perspectives into all aspects of the management and delivery of education in their societies. Several of the papers in this volume give clear examples of how this might be done. Nevertheless, as Angela Little points out in her conclusion, many questions still remain, and we therefore look forward to continuing description, analysis and discussion in this important area.

Acknowledgments

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TERRITORY, INDIGENOUS EDUCATION

AND CULTURAL MAINTENANCE:

THE CASE OF THE ARAKMBUT

OF SOUTH-EASTERN PERU

Sheila Aikman

Indigenous peoples are the inhabitants of a particular territory stretching back to before the establishment of the nation-State. They define themselves as distinct from other groups or minorities within the nation-State through their relation to the land and their culture. 'Indigenous' is a term now widely accepted nationally and internationally to refer to the colonized peoples of the world who are prevented from controlling their own lives, resources and cultures (see ICIHI, 1987; Burger, 1987). Indigenous peoples hold a special relationship to their territory which is a fundamental aspect of their identity, and one which distinguishes them from 'ethnic minorities' who do not necessarily have close ties to a particular area. For indigenous peoples, the term territory denotes much more than a piece of land—it encompasses all features of the physical environment and its resources; it is also a space where the collective experience and memory of a people is sacred and intimately interrelated with the rest of living beings; it encompasses freedom of religious and cultural expression and political control (Chirif, Garcia & Chase Smith, 1991, p. 27-28; Gray, 1994).

Sheila Aikman (United Kingdom)

Has carried out field work at different periods over the last fifteen years with the Harakmbut of South-eastern Peru. Since 1984 she has worked with the International Work Group for Indigenous Affairs in Copenhagen and Oxford, in particular with indigenous self-development projects in Latin America. In 1994 she completed a Ph.D. at the University of London on intercultural and bilingual education, and since then has been working with the Reading (UK)-based non-governmental organization, Education for Development.

Indigenous peoples consider their traditional territory to be the foundation of their indigenous cultures:

Our spiritual and cultural relationship to our environment—the land, seas, air and natural resources—is the foundation of our native cultures (International Work Group for Indigenous Affairs, 1994a, p. 50).

Other indigenous peoples have expressed this as follows:

The spiritual aspect of our people has its origin and foundation in our relation with the land and environment and finds its maximum expression in the distinct philosophical and religious ceremonies which we have practised through the ages (International Work Group for Indigenous Affairs, 1994b, p. 57).

Territory is, therefore, fundamental in indigenous peoples' desire to maintain their cultural and spiritual practices. The interdependence of land, philosophy and cultural creativity is expressed in the daily lives and cultural practices of each group of indigenous people. Land is not just valued for its economic potential but also as the foundation of cultural knowledge and the source of different indigenous philosophies. It is the source of indigenous history, the focus of the practical use of all learning and the source of growth and well-being.

This intimate relationship between indigenous peoples and their territories means that, for many, ensuring territorial rights is a question of providing for the future maintenance of their identity. Here we understand identity as the internalized cultural consciousness and identification with a distinct concept of reality accepted by virtue of participation in it (Brock & Tulasiewicz, 1985, p. 4). The meaningfulness of indigenous peoples' cultural practices derive from their distinct perspectives of reality, which are related to their conceptualization of territory.

However, indigenous peoples' relationships with the land is constantly under threat. Some indigenous peoples are being forcibly relocated to make way for resource exploitation such as mining, oil exploration and logging; some have had their land flooded for hydro-electric dams; while others suffer unrestricted colonization and subsequent destruction of their territories (Erni & Geiger, 1994; Kidd, 1994). Indigenous peoples are searching for ways to guarantee their rights to their territories and protect their distinctive ways of life.

There are, however, many more subtle forces which threaten indigenous cultural maintenance such as national policies oriented towards the integration of indigenous peoples into the life of the nation at the expense of their cultural traditions. Cultural assimilation has been the main purpose of many educational programmes throughout the world over the twentieth century through the imposition of non-indigenous, dominant cultural and linguistic values in the classroom (Cornell, 1988; Osende, 1933).

Indigenous peoples are campaigning for the recognition of their rights to their territories, their freedom of cultural expression and their ways of life not only in law, both international and national (for example through the Declaration on the Rights of Indigenous Peoples currently being debated at the United Nations), but

also in policy and practice. Legal recognition of indigenous communal rights to land was enshrined in the International Labour Organisation Convention 107 of 1958 and reaffirmed in Convention 169. Indigenous peoples are also searching for means to participate in national societies in ways which do not jeopardize their identities.

Formal education and cultural maintenance

Over the last two decades many governments have changed their ideological orientation towards indigenous peoples and espoused a more positive approach to the cultural diversity within their borders. This can be seen in education policies which promote indigenous cultural maintenance. Consequently, many indigenous peoples today are campaigning for forms of schooling which are both bilingual and intercultural. Such an education aims at promoting cultural maintenance as well as facilitating indigenous peoples' participation in the national society on their own terms.

While schooling may be able to contribute towards the maintenance of indigenous values, beliefs and language practices, it alone cannot ensure their meaningfulness because this derives from indigenous philosophies and the different views of the world in which they are embedded. Cultural meaning has been sustained over generations through indigenous education practices and processes which the Western formal education system mostly ignores. These indigenous educational 'systems' are not focused on discrete units of space and time (the school building and the school day) but learning and teaching are integrated and indivisible parts of daily activities which take place throughout a people's territory. A people's territory, therefore, is not only important in terms of being the foundation of their conceptualization of the world, but as the meaningful context for learning and teaching; the flora, fauna, ecology, spirit world and other elements which comprise their territory are themselves the subject matter of the education.

There are many different school programmes designed to foster cultural and linguistic maintenance among indigenous peoples today. They differ greatly in terms of geographical factors, national education systems, demography, degrees of indigenous control, relations between the cultural traditions concerned, etc. but they also display a wide range of aims and practices. It is not the intention of this paper to discuss these differences but merely to note that cultural maintenance-oriented schooling is not a unified concept (Aikman, 1994). Furthermore, indigenous peoples' perception of the importance and usefulness of formal education for cultural maintenance varies according to, among other things, the extent to which other mechanisms for cultural maintenance, such as their own education system, have been eroded or are coming under pressure from their relations with surrounding national or other cultural traditions.

Another variable which is of considerable importance to indigenous peoples' perceptions of the usefulness of cultural maintenance-oriented schooling is pressure upon their territory. For some indigenous peoples their territory is under such threat that finding ways of ensuring its integrity is their foremost concern. The

Cree of James Bay, Canada, faced the potential destruction of their land in the 1970s through the construction of a hydroelectric dam. They fought back and in doing so constituted their own system of local government and management of land and resources that guaranteed that their traditional way of life could continue:

With these basic matters dealt with, we felt we could deal with the question of education, knowing that our culture and society would continue to grow and prosper and that we could adapt an education and pedagogical system that would meet our demands (Diamond, 1987, p. 88).

A Kaxinawa from Brazil expresses the paramount consideration for territory and its relationship with formal education in terms of 'first things first':

The future is in [territorial] demarcation, because when our land is demarcated we have all our future for our schools, because within this territory we teach and learn what we know (J. Paulo Mana, cited in Lindenberg, 1989, p. 215).

The next section considers the example of the Arakmbut in the Amazon region of South-Eastern Peru where the Arakmbut communities' concerns for the future of their territory are very acute. Territorial defence is such a major preoccupation that it takes priority over change in the system of schooling which exists at present. The analysis of the Arakmbut situation is based on field work I carried out in Arakmbut communities between 1991 and 1992 and for three months over 1993/4.

The Arakmbut of the South-Eastern Peruvian rainforest

The Arakmbut have Spanish language schools located in each of their villages run by either the Ministry of Education or the Dominican Educational Network of the Southern Amazon (RESSOP). The Arakmbut value the school but take no part in running it. Attempts by teachers, RESSOP and the regional indigenous federation to promote qualitative changes and cultural relevance have fallen on deaf ears. However, this does not mean that the Arakmbut are not concerned for cultural maintenance. Concern for their territorial integrity is primarily a concern for cultural maintenance and the freedom to pass their distinctive way of life to future generations through their indigenous educational processes. The Arakmbut indigenous education system is embedded in their cosmological distinction between a visible world and a spirit world, which in turn are embedded in their territory.

The Arakmbut are a hunter/gatherer/agricultural people who live in an area of lowland tropical rainforest in the Peruvian department of Madre de Dios. They are the largest Harakmbut-speaking people and number approximately 1,000 persons of a total Harakmbut population of 1,500. Today they live in five communities, each with a village encircled by an area of land which has been officially demarcated and titled according to the Law of Native Communities in 1986 and the Political Constitution of Peru of 1979 which guaranteed the inalienable rights

of the indigenous communities to their territories. These communities and their territories are situated in what was the much larger territory of the Arakmbut peoples until the end of the nineteenth century. Then they were subject to genocidal pressures from the exploitation of rubber for the international market and subsequent decimating diseases. They are estimated to have been reduced by 90-95% over the last 100 years (Gray, 1983).

The Arakmbut titled territories today can be understood in terms of a series of concentric circles (Gray, 1994). In the centre is the village which comprises small nuclear family huts interspersed with fruit trees, a football pitch, the school and chicken huts. In a wide circle around the village and up to half an hour's walk or punt by canoe are the slash and burn gardens which the women plant and tend. Extending beyond and between the gardens is an area of forest, rivers and streams where the women fish and gather fruits and firewood; beyond this is the area where the men hunt wild pig, tapir, monkeys and birds. Arakmbut extended families often leave the permanent village and set up temporary camps around their territory for fishing and hunting.

Each Arakmbut is a member of one of seven exogamous clans and political alliances in a community are often organized along clan lines whereby an extended family of brothers and their wives will work and live closely together and share meat from a hunt between them. Arakmbut social life is also organized around a person's kin (*wambet*) which comprises all of one's close non-affiance relatives (Gray, 1983). Gender is a fundamental aspect of the division of labor and men and women participate in activities, such as food production, preparation and consumption in a complementary way (Aikman, n.d.). While the men hunt and bring home raw meat, the women transform the raw meat, which is potentially dangerous because of the animal spirit matter which it contains, into food which sustains and nourishes the household. This hunted meat is considered vital for growth and physical and spiritual strength.

For the Arakmbut, the invisible world of the spirits is no less 'real' than the visible world. The larger forest animals have spirits which can be contacted through dreams. A curer (*wamanoka'eri*) is someone who can diagnose which animal spirit is attacking a sick person and cure that person by luring the spirit away from them. Dreams are important shamanic practices and a 'dreamer' (*wayorokeri*) is someone who has developed the art of dreaming and can travel throughout the invisible world conversing with the spirits and seeking advice (Gray, forthcoming).

As Teasdale notes for hunter-gatherer societies, existence is based on principles of co-operation and co-existence both with the natural world and with other people (Teasdale & Teasdale, 1994). The Arakmbut view of the way the world is organized is distinct from a Western world view which is promoted in Arakmbut communities through the school. It emphasizes a coherence and unity of knowledge. For example, the Arakmbut do not distinguish between practical knowledge and theoretical knowledge or between religious and secular knowledge but the spiritual dimension provides an inter-relatedness which runs like a thread through all knowledge.

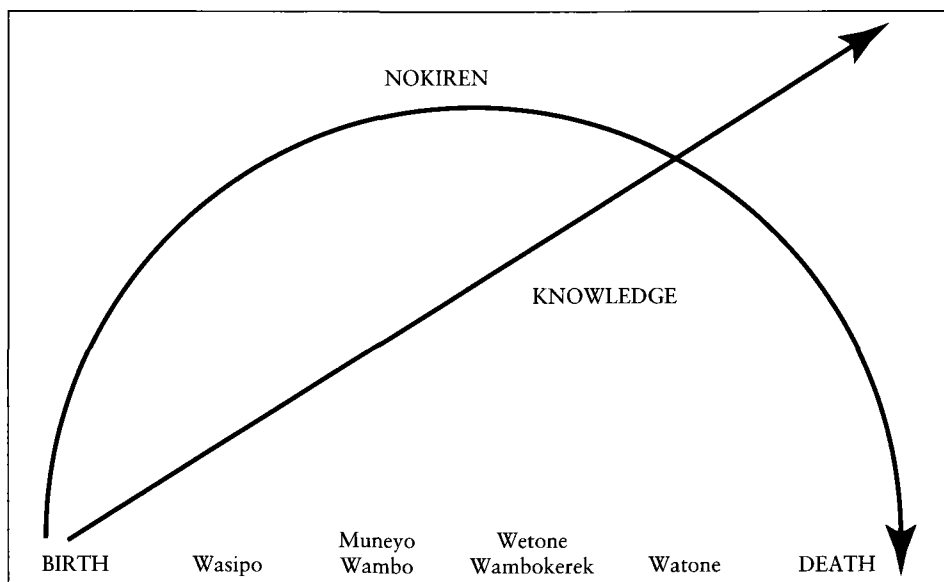
This knowledge is structured according to such concepts as gender complementarity, clan affiliation, age, communal house affiliation, marital status and residence. For example, men and women have access to different bodies of knowledge: men develop an understanding of the forest and the river and hunting skills; women develop a body of knowledge and expertise in garden cultivation and edible forest plants and fruits. Arakmbut learning is oriented towards understanding this world, a world which is unpredictable, recalcitrant and constantly having to be reinterpreted through each members' experience and interaction. Education is not learning and continual striving for betterment, for 'progress' or for 'development' but learning in order to try to maintain a balance between the visible and invisible worlds of their territory, that is between the world of the Arakmbut and the world of the spirits which have control over both the person and the community's health and nutrition and the well-being of the flora and fauna within their territory.

An indigenous Arakmbut education system

Arakmbut learning and growth is directed towards gaining the knowledge and ability to manage several gardens with a diversity of crops or to acquire good hunting skills to bring in a regular supply of meat which will ensure both physical growth and good health. In order to do these things a man and woman must learn to manage their relations with the visible and the invisible world and, to do this, they need to be strong, both in body and in soul (*nokiren*). An adult who can combine physical strength, spiritual strength and knowledge and understanding of the Arakmbut universe and use it through caring for the well-being of the community is highly respected.

For the Arakmbut, learning is lifelong and knowledge is built up through experience and understanding. Growth from birth to death is punctuated by stages, each stage heralding a new phase of learning and a new ability to use knowledge for the benefit of the individual, the household and the community. As Arakmbut approach old age their ability to learn about the invisible world increases as their ability to use this knowledge decreases. This is because of the changing relationship between the body and the *nokiren* through life (see Figure 1).

When a baby is born its *nokiren* has only weak links with its body and it must remain in the village where it can be protected from spirits which would lure its *nokiren* away and cause death. The ability of children (*wasipo*) to know and explore Arakmbut territory increases as they grow and their *nokiren* becomes more strongly fixed to their body. Between 12 and 14 years of age a boy becomes a *wambo*. Prior to mission contact in the 1950s this was marked by a ceremony. As a *wambo* he can begin to learn in earnest how to hunt, sometimes accompanying his father on hunting trips and taking part in communal peccary hunts, travelling deeper into the forest to learn about hunting and the forest creatures.

FIGURE 1: Relationship between the *nokiren* and the growth of knowledge through life

By the time a *wambo* is 18 or 19 years old, he has gained considerable experience and knowledge of the forest and is ready to become a man and marry. This change in status from *wambo* to *wambokerek* (man), also formerly accompanied by a ceremony, means that he is now strong enough to hunt and provide meat for a family and to reproduce his clan through his children. This implies that he is strong in body and his *nokiren* (soul) is firmly tied to his body.

Unlike boys, girls have never had ceremonies to mark their growth and progress towards womanhood but physical maturity and menstruation heralds a girl's transformation into a *muneyo* (young woman). Pregnancy and childbirth signify the most important steps into adulthood for women and mark their change of status from *muneyo* to *wetone* (married woman who has given birth).

As mature men and women, Arakmbut are at the peak of their physical strength and their *nokiren* is most firmly attached to their bodies, which means they are in a position to defend themselves, their family and the community against dangers which can come from the visible world (for example encroachments on their territory) and the invisible world (such as illness). They accumulate knowledge about the forest and the river which helps them maintain the delicate balance with the invisible world and the spirits which inhabit it. They also learn not only an ever-widening vocabulary of words but also names which are important in the Arakmbut system of classification of things. Names encapsulate relations between the Arakmbut and the spirit world. Personal names are kept secret because others can use them to attract malevolent spirits and harm the person.

Adults and elders (*watone*) continue to form deeper understandings of, and closer relations with, the spirits and the invisible world. As their bodies begin to

deteriorate physically, their *nokiren* becomes less firmly fixed to their bodies and their ability to cope with the potential danger of the invisible world decreases. Nevertheless, there is a certain irony about the position of the old, in that many old people have amassed a large amount of knowledge and understanding of the forest, river and the different species which they can use for curing purposes. Yet their efficacy in curing begins to wane as their *nokiren* becomes less secure.

This situation was exemplified in the Arakmbut community of San José when a boy fell ill and his grandfather knew several curing chants (*chindign*) with which the boy might be cured. However, the grandfather was elderly (*watone*) and, instead, the boy's father attempted the curing, though he was only beginning to learn the curing chant. The father's strength as a *wambokerek* (adult man), in terms of his ability to battle against the spirits which wished to harm the child and take its *nokiren*, outweighed the old man's knowledge of curing and of the spirit world. Because of the potential harm in the invisible world, the most dangerous activities in an Arakmbut person's life are only possible when that person is at his/her most resilient, that is, as an adult (*wambokerek*, *wetone*). Detailed knowledge of the spirits can only be gained after a lifetime of hunting and fishing and gardening so that a person is at less risk from the spirits at the time when he/she knows most about them.

Arakmbut learn and acquire knowledge through direct experience, through the spirit world, and from the elders and other adults and peers. This knowledge is organized and framed within the parameters which define the Arakmbut world view, such as the existence of the visible and invisible worlds and their relationship with the forest, the river, and the community. However, within this ontological framework a person has the possibility of developing his or her own understanding of the dynamic relationship between these worlds through their own learning and experiences. The greatest *wayorokeri* (dreamers) help the Arakmbut to interpret and define their relationship with the invisible world at any one time and help them interact safely with it. Thus, an Arakmbut world view is continually changing and being redefined within these parameters.

Through their own culturally and socially discrete education system the Arakmbut acquire knowledge and understanding of the world in which they live. The understanding defines and is defined by an individuals' sex, clan, age, group, residence and language, and the relations they have established with the invisible world of the spirits which inhabit the river and forest. Knowledge is private and belongs to the person, but a person is only recognized as knowledgeable and skilled when she/he uses that knowledge in a demonstrable way for the benefit of the community, such as in curing.

Consequently, for the Arakmbut, learning to hunt, fish, garden and collect in the forest is fundamentally related to learning about the spirits and the invisible world, and about how to make contact and use them beneficially. Moreover, it is from the world of the spirits themselves, through myths (for example, Serowe, Wainaron and others) that the Arakmbut learn how they should learn and about the guiding principles in acquiring skills and knowledge and how to apply them

(Aikman, 1994, Chapter 6). In applying the principles found in the myths children, youths and adults acquire the knowledge that will enable them to be proficient, productive and strong Arakmbut for lifelong learning.

In summary, the preceding discussion has demonstrated that, for the Arakmbut, concern with the maintenance and protection of their territory is not simply a concern for their economic activities, but that these activities are embedded in the well-being of the territory and its resources, both physical and spiritual. For the Arakmbut, hunting, gathering and agriculture are not simply activities with economic significance but are at the heart of their philosophy of life and identity. Learning to hunt and garden, learning about the species within their territory, is learning about being Arakmbut.

The intercultural lives of the Arakmbut

The Arakmbut canon includes a long myth about their relations with non-Arakmbut, the 'Papas'. The Papas are cannibals who dress in white, carry machetes, attack the Arakmbut and capture their children. Versions of this myth vary from community to community and link the Papas with different groups of colonizers in the past (Gray, 1986). Today the Arakmbut say the Papas are non-Arakmbut gold-panners with whom they live in close proximity and have ambivalent relations.

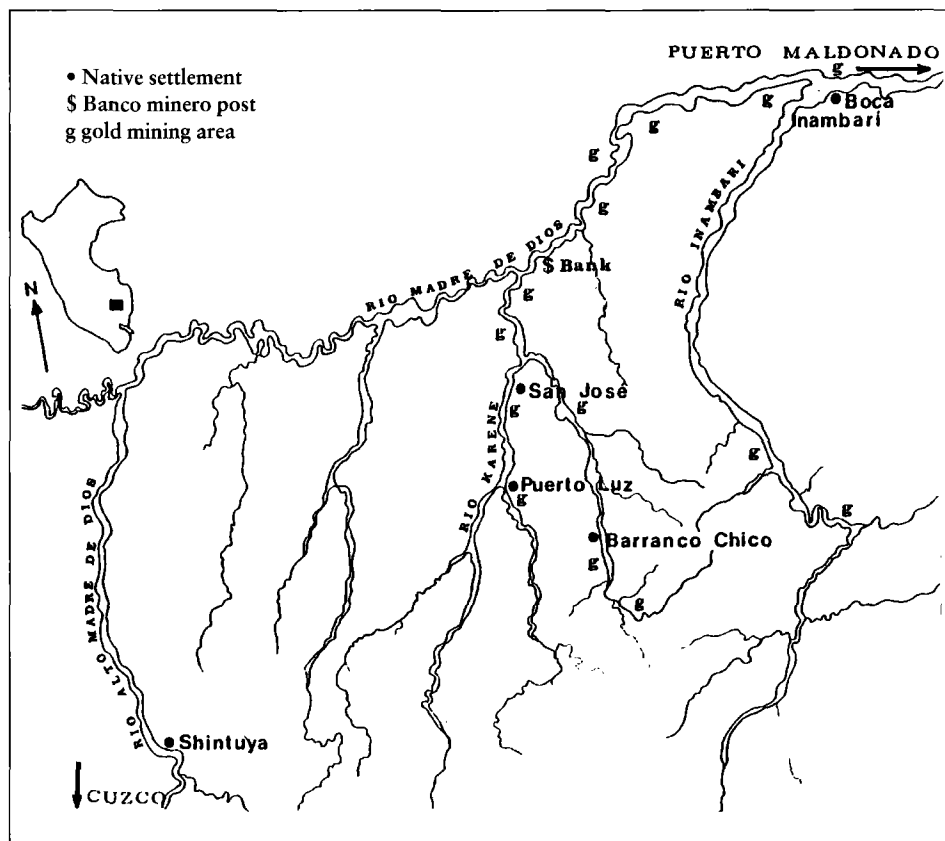
The Arakmbut first entered into sustained contact with the national society in the 1950s through the concerted efforts of Dominican missionaries. After several years in the close confines of the Dominican mission of Shintuya, where they sought relief from yellow fever and internecine warfare, they left in groups through the 1960s and early 1970s and set up the five communities in which they live today (Boca Inambari, Barranco Chico, San José, Puerto Luz and Shintuya).

The early 1970s was a time of booming gold prices and the discovery of gold dust in some of the rivers in Arakmbut territory. In the 1960s two roads were built linking the highland city of Cusco with the rain forest of Madre de Dios. Through the 1970s and 1980s colonists from the highlands flooded down the roads and rivers to pan for small quantities of gold dust in the alluvial deposits of the rivers Karene, Inambari and Madre de Dios (see Figure 2). As the increasing presence of colonists and gold-panners made hunting more difficult, the Arakmbut began to pan gold using artisan methods to complement their other traditional activities. They were increasingly forced off beaches and fishing grounds within their own demarcated territories at gunpoint by gold *patrones* and even by foreign nationals. Arakmbut hunters encountered colonists' gold camps in the very heart of the forest on ancient river courses where the pounding of the motor pumps ensured that there was no longer any game there. They became concerned for their future and for their children's futures once the gold-panners had stripped their land of its resources:

I see the future full of problems for us Amarakaeri [Arakmbut]. Few people care about us and we are becoming more and more persecuted by the police and local patrons. There is

less gold work and less hunting with animals frightened by colonists. One day the gold will run out. The colonists can leave, but we can't. And after the gold rush? What will be left for our people? (T. Quique, cited in Gray, 1986, p. 3).

FIGURE 2. Present Arakmbut settlements and gold-panning activities



By 1992 the amount of gold dust in the rivers was in decline but with widespread political unrest in other parts of Peru, and high unemployment and poverty, there were no incentives for the thousands of colonists to move on elsewhere. Instead, they turned to agriculture, cattle ranching and lumbering as alternatives. Large companies also began to move into the region clearing huge tracts of land for cattle-rearing.

Arakmbut legal rights to their territory are flouted by colonists and *patrones* and, since the early 1990s, they have been heavily outnumbered on their own territories. With the growth of settler communities both in and outside of Arakmbut demarcated territories there has been a growth in the demand for fresh meat and vegetables. Areas of Arakmbut traditional territory, formerly ignored by the gold prospectors because they do not have gold-bearing rivers, have become centres for hunting by colonists to meet the needs of the burgeoning population.

The disruption and destruction of the forest environment has depleted natural stocks of fauna and flora, making hunting harder for the Arakmbut. Hunters find very little game at the salt licks, where the animals used to gather. As we have noted, hunting and fishing are fundamental activities for the Arakmbut, not simply in terms of the source of food they provide, but in terms of the relations which the hunters and fishers establish with the animal species and, through them, with the invisible world of the spirits. Threats to the ability of the Arakmbut to hunt and fish have far-reaching consequences because meat is a vital element for physical growth and strength. It is also vital for the physical welfare of the community; relations with beneficial spirits are established through hunting and contribute towards maintaining a healthy community free from the sicknesses which the spirits can inflict.

As their subsistence base becomes threatened and hitherto complementary activities, such as gold panning, become less viable, the Arakmbut worry about how to protect their territory from complete destruction. As a young Arakmbut says:

Over and above [the migrants, the small Peruvian capitalists and large-scale companies] is also the structural aggression: racial discrimination, the destruction of our territories and the confiscation of our resources (Sueyo, 1994, p. 42).

The Arakmbut do not define their struggle against these problems as defending a philosophy of life, a spirituality, or in terms of cultural maintenance. However, their increasing concern for their future and that of their forest and rivers is, in essence, a concern for their cultural maintenance because it is the foundation of their distinctive way of life and view of the world where the visible and the invisible together determine sickness and health, life and death.

The contribution of formal education towards cultural maintenance

The primary schools in Arakmbut communities are run by non-indigenous Spanish-speaking teachers, some of them lay-missionaries. They teach according to a very prescribed national Spanish language curriculum which is almost entirely focused on the urban lives of middle class Peruvians living on the coast. The Arakmbut communities are very supportive of this schooling and value it for the Spanish language teaching it provides. For their participation in the life of the nation, Spanish is crucial and the Arakmbut want to be part of Peruvian society, not isolated from it. Moreover, in order to try to combat the problems facing them and defend their interests, they need to be proficient in Spanish. Only through Spanish can they gain access to the Peruvian legal system to fight for their legal territory; Spanish is the common means of communication within the regional indigenous multi-ethnic and multilingual federation; and Spanish is the language of commerce and the gold panning economy.

In the past the Arakmbut have rejected bilingual schooling, with mother-tongue literacy, as inappropriate for their pressing needs: lobbying through national official channels for recognition of their rights; verbal confrontations with illegal colonists on their territory; acquiring permits for using their canoes; complying with government gold mining regulations; and various other bureaucratic procedures which are forced upon them.

Meanwhile, they themselves have ensured the education of their children, the continued learning of adults, and the enriching of their own bodies of knowledge according to their own educational processes:

For the Harakmbut culture all is not lost; the people maintain their own ethnic traditions... In spite of many difficulties the young people still grow up with an indigenous identity and understand that it is founded in the maintenance of their language, knowledge of their territories and understanding of their beliefs and values which come from their traditional cosmology (Sueyo, 1994, p. 42).

Cultural maintenance focused on the school is a secondary consideration for the Arakmbut. Their first consideration is for the preservation of their territory which is the source and inspiration for their cultural practices and beliefs and the 'classroom' for their own educational practices. With their education system under their own control they believe that the school's main consideration must be as a learning ground for knowledge and skills from the national society and that representatives of the national society and its cultural traditions ought to provide it. Once their struggle for territorial integrity is won they may feel that the school can offer additional and new channels for strengthening their own indigenous cultural practices, including their indigenous education.

The Arakmbut are, nevertheless, receptive to changes which they consider will improve Spanish language learning, such as the use of the mother-tongue with the youngest children, but only if this is not seen to detract from their main project of securing their territory. Meanwhile, they are content to let others control and organize schooling for their children, a service from the national society providing teaching about that society which they consider extremely important.

Strengthening indigenous educational practices

As pressures on their territory have become almost intolerable over the past few years, the Arakmbut have begun to discuss a new vision for the future. At the heart of this vision is territorial defence. And, once their territory has been secured, they propose a strategy for strengthening their cultural practices with regard to the intercultural lives they lead today as both Arakmbut and citizens of the Peruvian state. They harbour no desire to recreate their lives as it was in pre-colonial times some fifty years ago before the missionaries 'contacted' them.

Territorial defence hinges on the official recognition and protection of an Amarakaeri (Arakmbut) Communal Reserve, an area of land under indigenous management. This Reserve is an area of Arakmbut traditional territory which lies

outside the individual territories legally delimited for each community. It is an area of relatively little colonization to date, where all Arakmbut could continue to carry out their traditional subsistence practices and where Arakmbut educational practices could thrive:

In the Amarakaeri Communal Reserve, we could return to hunting and fishing as is our custom and also manage the forest without endangering it. In this way we could escape much of the effects of the market and economy and the savage capitalism which has arrived in the Amazon [. . .] it will permit us to recover our own economy and health system, to revalue our Harakmbut culture and education (Sueyo, *ibid*).

The physical presence of large numbers of non-Arakmbut in their territories has had an influence on Arakmbut educational practices. Rather than accompany their parents and siblings through the day, children are obliged to attend primary school. Nowadays, some of the older children also attend secondary boarding schools which take them away from their communities altogether. Although the Arakmbut want this schooling for their children they also want to ensure that they continue to learn from the elders despite spatial restraints (through the presence of colonists on their territory and in their villages) and temporal constrictions (the obligation to attend school).

In recent years, just as the forests have become the stamping ground of colonists and company employees, so the villages have become more frequented by gold-panners, tradesmen, missionaries and teachers. As the territory and its resources are being plundered, the Arakmbut knowledge base becomes in danger of being undermined. In the villages too, the presence of non-Arakmbut is threatening indigenous educational practices. Nowadays elders only rarely sit outside on a clear night and tell a myth for the enjoyment of the community and never in the presence of *wahaiipi* (people from the highlands) for fear of being ridiculed.

The Arakmbut vision is based in a desire to ensure that at least a part of their villages remain uniquely theirs, away from the influence and control of the lay-missionary teachers and the Quechua gold-panners. To this end, the Arakmbut posit the construction of a traditional communal house (*haktone*), or 'culture centre'. Until the 1950s, the Arakmbut lived in communal long houses which served not only as sleeping quarters but as a meeting place and social focus for rituals, ceremonies, singing and dancing. Senior men and women and the elders (*watone*) told stories and myths, and supervised the education of the young. A new communal house would be Arakmbut in design and purpose and a place where the whole community would participate in traditional practices in creative and meaningful ways.

The communal house is intended also as a meeting place and a forum for a wide-ranging programme of non-formal education to be carried out with the collaboration of regional and national indigenous federations. The Arakmbut are becoming increasingly aware that there are aspects of their lives which are not being addressed by either the school or their traditional education system. The Arakmbut of today are hunters, gatherers and agriculturalists but also gold-pan-

ners, university students and carpenters. Yet, they remain distinctly and proudly Arakmbut. The Arakmbut are continually redefining their relations between the spirit world and the visible world and Arakmbut culture exhibits a dynamism and flexibility as the visible world undergoes profound changes through outside contact. But, as Sueyo (*ibid.*) states, Arakmbut identity has adapted and changed within its flexible parameters. Their vision for cultural maintenance illustrates the adaptability and flexibility of Arakmbut identity: on the one hand, the Communal Reserve will ensure the continuance of their traditional hunting and gathering; on the other hand, the communal house will host courses and workshops concerning, for example, self-sufficient crop cultivation, traditional crop recovery, selective and sustainable timber extraction, and alternative biodegradable gold-panning processes in each community territory. It will provide a focus for debate and discussion about indigenous rights, local government and measures for territorial defence.

The communal house is a strategy for helping maintain and nourish Arakmbut cultural practices so that they retain their meaningfulness and usefulness in a changing social and physical environment. It is also a strategy to ensure that the Arakmbut adapt with the changes taking place around them and can participate in the national society in the ways they themselves want. The Arakmbut value their cultural practices and their way of viewing the world because it is based on respect for the land, its resources and other beings. In contrast, they see around them people being exploited and in turn exploiting and destroying the environment, which is Arakmbut territory and the foundation of their lives.

Conclusion

The Arakmbut provide a vivid example of a people's own strategies for cultural maintenance based in the profound respect they hold for their environment as a source of their identity and way of life. It illustrates the shortcomings of the school as an exclusive focus for cultural maintenance because it does not conceptually encompass, and consequently ignores, the cornerstone of the education which is indigenous to the Arakmbut, that is, territory.

The Arakmbut take little active interest in the formal education which their children receive. However, this is not to suggest that education *per se* has a low priority for them. On the contrary, Arakmbut concern for their territory is a deep concern for their indigenous education system and its pivotal role in cultural maintenance. Furthermore, a lack of interest in schooling does not imply a lack of perceived usefulness and importance for it. The Arakmbut highly value the monolingual and monocultural schooling which the missionaries and non-indigenous teachers provide. They see it as a source of skills in Spanish and knowledge about the national society which they need to help them in their struggle to maintain their territory as well as in their daily contact and participation in the national society.

With the creation of an Amarakaeri Communal Reserve in Madre de Dios, the Arakmbut and other Harakmbut peoples will administer and protect an area of their traditional territory which will not only sustain their cultural practices but

sustain the flora and fauna of the tropical rain forest. Commercial exploitation will be prohibited. The Reserve awaits final authorization from the President of Peru. In many parts of the Amazon today, indigenous peoples are intent on regaining custodial care of their traditional territories so that they can continue to look after it as they have done for centuries as guardians for future generations. The indigenous peoples of the Bolivian Amazon, for example, are implementing strategies for the management of the natural resources and sustainable development of the Mojos region as the 'owners of an ancestral knowledge about the diversified use of ecosystems' (Casanovas, 1994, p. 18).

This desire to regain control and care for their territories is echoed by indigenous peoples with very different cultural traditions in many parts of the world. For example, the Van Gujjars in Uttar Pradesh, India, are being denied access to forests which they have used sustainably over centuries and which have been declared the Rajiji National Park. Park administrators and environmentalists question the ability of an 'illiterate tribe' who use the forest for their own purposes to administer it properly (Gooch, 1994). However, the Van Gujjars stress that because they are totally dependent on the forest and its ecology for their subsistence they have an interest in preserving its resources and employing their own strategies for protecting them (*ibid.*). Such protection strategies derive from indigenous peoples' own educational practices oriented towards both long-term cultural maintenance and environmental sustainability. Australian Aboriginal peoples echo indigenous peoples in the Amazon and other parts of the world when they state that, rather than the land belonging to them, they somehow belong to the land (Christie, 1988).

Indigenous peoples' perceptions of the usefulness of formal education in contributing towards the maintenance of their knowledge, skills and language vary enormously, as do ways in which the school is being used to try to do this by both indigenous and non-indigenous people and organizations. Nevertheless, the school cannot replace an indigenous peoples' own educational practices and processes without threatening their indigenous identity which derives its meaning from a unique relationship with their territory.

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'A FAIR CHANCE FOR ALL?'

INDIGENOUS RIGHTS AND

TERTIARY EDUCATION IN AUSTRALIA

*Peter Gale*¹

Introduction

This paper focuses on a qualitative research project on Aboriginal and Torres Strait Islander participation in tertiary education in northern Australia. Aboriginal and Torres Strait Islander people comprise 1.6 % of the total Australian population of 17 million. However, approximately one-quarter of the population in the northern coastal region identify themselves as Aboriginal or Torres Strait Islander Australians. This tropical and sub-tropical area is sparsely populated with less than 200,000 people, and is spread across three Australian states: Western Australia, the Northern Territory and Queensland.

'Aboriginal' is an English word which refers to people living in a country or place from earliest known times. While there is no pan-Australian name which Aboriginal people use to refer to themselves, there are a number of Aboriginal words which have become accepted names for groups within particular regional areas. In northern and central Queensland, for example, Aboriginal people refer to themselves as Murris, while in the north-eastern part of the Northern Territory the word Yolngu is used.

Torres Strait Islanders are Melanesian people from the islands north of Cape York Peninsula, although many now live in the towns and cities of north Queensland. In 1992 they adopted their own flag as a way of representing their distinct identity. 'Aboriginal' and 'Torres Strait Islander' are the most common terms used to refer to the indigenous peoples of Australia. While acknowledging the wide diversity in languages and cultures within the indigenous population, the

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terms 'Aboriginal' and 'Torres Strait Islander' are used in this paper to refer to the indigenous peoples in Australia.

Historically in Australia there have been various levels of post-secondary education. In this paper I will use the term 'tertiary education' in an inclusive way to refer to universities, post-secondary colleges, and technical and further education provisions.

In the past, the response of Australian tertiary education providers to Aboriginal and Torres Strait Islander people has been one of exclusion. The low level of indigenous participation at all levels of education was officially recognized as a problem by the Australian Government in the 1970s. In 1972, for example, there were less than 100 Aboriginal and Torres Strait Islander people enrolled in tertiary education. From the mid-1980s indigenous Australians were identified as an 'educationally disadvantaged group' within tertiary education as part of a shift in government policy towards equity and 'a fair chance for all' to participate in tertiary education (Australia. DEET, 1987; 1988; 1989; 1990). The number of Aboriginal and Torres Strait Islander students increased to over 3,000 by 1989, while projected enrolments for 1995 exceed 6,000 (DEET, 1994a). Nevertheless, the indigenous participation rate still remains lower than that for the non-indigenous population.

This paper explores how Aboriginal and Torres Strait Islander participation in tertiary education has been influenced by the ways in which indigenous people are perceived, spoken of, and written about. I examine how these representations of Aboriginal and Torres Strait Islander people have shaped the ways in which human rights, individual rights and indigenous rights have been applied in Australia. In particular, I will critique the ways in which these three concepts of 'rights' have been applied in education policy within Australia. I will argue that indigenous rights have been limited by the ways in which Aboriginal and Torres Strait Islander people have been represented. I will also examine the conflict between the ways in which indigenous rights have emerged around the world, in contrast with individual rights with particular emphasis on equity and access to tertiary education in Australia.

The paper concludes that the contemporary experience of most Aboriginal and Torres Strait Islander educators and students within tertiary education in northern Australia remains 'eurocentric' and assimilatory. I argue that, to bring about a substantial change in tertiary education for indigenous Australians, there needs to be a shift in the dominant representations of Aboriginal and Torres Strait Islander people. Instead of being represented as a 'disadvantaged' group with an associated emphasis on equity, I conclude they should be represented as indigenous, with a corresponding emphasis on indigenous rights.

Globalization and the politics of rights

Recent academic debates have sought to address the limitations of social theory which has been founded on class relations. This has led to a greater emphasis being

placed on the significance of gender, ethnicity and 'race'. The emergence of new social movements, such as the Indigenous Rights Movement, is one of many aspects which have been described as part of a process of 'globalization'. The inclusion of the cultural dimension associated with new sites of political struggle, such as the Indigenous Rights Movement, is a significant aspect of this process of globalization. Stuart Hall (1992), writing from the context of 'race' relations in the United Kingdom, argues that the central issue within contemporary politics is how social reform can work with and through difference. This is a complex process involving the formation of solidarity and political alliances, and identification between social movements and minority groups as a basis for social reforms, while allowing for real heterogeneity and diversity of interests and identities.

From a non-Western perspective, Alatas (1993, p. 332) argues that there needs to be a critique of Western social science, and he calls for liberating ways of speaking, thinking and writing which are able to break away from the 'wholesale adoption of western ideas and techniques'. In relation to the Australian context, Carmen Luke (1992, p. 49) suggests that what is required is serious critical attention to those contemporary ways of thinking and speaking that claim to be emancipatory while remaining theoretically 'gender- and colour-blind'. The struggle for rights has been a central feature of contemporary global social movements. This has involved a diversity of interests including human rights, individual rights and collective rights.

Collective rights seek to protect the rights of particular groups and include cultural characteristics, such as particular languages, religions, legal norms and culturally important activities. However, collective rights must satisfy two criteria: the legitimacy of the collective right, and the need to secure a collective right. Collective rights also require a means of protection and an evaluation of any conflict between competing rights (Sanders, 1991). This paper seeks to discuss Aboriginal and Torres Strait Islander participation in tertiary education in Australia in the light of these theoretical challenges and the emergence of a global Indigenous Rights Movement and contemporary public debates surrounding indigenous rights.

Aboriginal and Torres Strait Islander participation in tertiary education

Since the establishment of the first state authorities in Australia over two hundred years ago, Aboriginal and Torres Strait Islander people have been subjected to successive government policies of segregation, 'protection' and assimilation. In 1967 Aboriginal and Torres Strait Islander people were finally granted recognition as Australian citizens. Over the past two decades there have been substantial changes stemming from political reforms made in the early 1970s: the implementation of a self-management policy in 1975; Aboriginal Land Rights legislation in the late 1970s; and more recently the recognition of native titles in the Native Title legislation of the early 1990s. While Australian governments no longer espouse an

'assimilationist' policy, the persistent levels of inequality in the social indicators of health, housing, employment and levels of imprisonment of indigenous people remain a testament to the failure of contemporary policies.

There have been major changes in Aboriginal and Torres Strait Islander participation in tertiary education over the past three decades since the first full-time Aboriginal teacher training course was established in 1968. Since then Aboriginal and Torres Strait Islander participation in tertiary education has developed primarily through the establishment of over fifty special Aboriginal enclave programmes that provide personal, academic and cultural support for students in institutions of tertiary education across Australia. This has occurred along with the establishment of Aboriginal and Torres Strait Islander institutions of tertiary education.

In seeking to address the low level of Aboriginal and Torres Strait Islander participation in tertiary education, there has been a significant increase in the allocation of government resources over the past decade. Since 1985 there has been a separate funding allocation for the provision of special entry places for Aboriginal and Torres Strait Islander students in institutions of tertiary education (DEET, 1989). Hence the mid-1980s can be seen as a crucial turning point in Aboriginal and Torres Strait Islander participation in tertiary education. In 1988 the report of the Aboriginal Education Policy Task Force made a further contribution to future policy direction, and in 1989 the National Aboriginal and Torres Strait Islander Education Policy, referred to as the AEP, was formally endorsed (Australia. DEET, 1989). More recently, in 1994, there has been a National Review of Education for Aboriginal and Torres Strait Islander Peoples, with the aim of improving participation rates even further (DEET, 1994*a*, 1994*b*).

The preceding discussion has provided a brief description of the changes in government policy and the effects of these changes in tertiary education. I will now discuss the ways in which Aboriginal and Torres Strait Islander people have been represented in the tertiary education sector.

Representations of Aboriginal and Torres Strait Islander people in tertiary education

For over 200 years Aboriginal and Torres Strait Islander people have been represented as an inferior people and excluded or marginalized from mainstream society. Stanner (1979, p. 144) traces the changes in European thinking since the first sightings of the 'Aborigine', arguing that there are distinguishable 'lineages of thought' in relation to the Australian Aboriginal population. At the time of the European invasion, Europeans tended to view the indigenous people of Australia with 'contempt, derision and indifference', as 'primal', or as an inferior 'dying race' (Stanner, 1979, p. 145, 151–53).

There have been distinct themes in these ways of thinking, speaking and writing about Aboriginal and Torres Strait Islander people. These include: as an object of study in anthropology (Muecke, 1992); as inferior and primitive (Brock, 1993); or as 'indians' (Nakata, 1993, p. 335). While these ways of knowing the

'Aborigine' and the 'Islander' have been challenged and are changing, the dominant representations continue to be founded upon their relative position of disadvantage in relation to the Australian population. Government policies have been based on the 'problem' of disadvantaged people. The emphasis within the national Aboriginal Education Policy, for example, continues to be founded on the representation of Aboriginal and Torres Strait Islander people as a disadvantaged group.

Hence there are a number of what can be identified as competing discourses, or 'descriptions and figures of speech often assembled around metaphors and vivid images' (Wetherell & Potter, 1992, p. 90). Whenever we speak, read, write or act, we call forth certain ways of viewing the world, and ways of valuing and thinking about our fellow human beings (Gee, 1990). As educators, we have a moral obligation to become critically reflective of the ways we think, speak and write about the processes of education, and how these ways may privilege some and harm others (see also Gee, 1990).

In Australian tertiary education there are competing ways of conceptualizing Aboriginal and Torres Strait Islander participation, which are shaped by the ways in which Aboriginal and Torres Strait Islander people are perceived and represented. This is evident in the three different conceptualizations of 'rights' in relation to education. Human rights are expressed in terms of the human right to literacy and a basic education. Individual rights are expressed in terms of equity and access to all levels of education within the boundaries of the nation. Alternatively, indigenous rights are expressed in terms of the right to learn in one's own language, the selection of curriculum material and control over the processes of education. The following section describes a qualitative study which examines the significance of the ways we 'know' Aboriginal and Torres Strait Islander people and how this shapes the participation of Aboriginal and Torres Strait Islander people in tertiary education in Australia.

Qualitative research on tertiary education in Australia

This research is based on over 100 interviews with professional educators, administrators and a limited number of students in three tertiary education institutions in northern Australia. The interviews focused on perceptions of Aboriginal and Torres Strait Islander participation in tertiary education. This included reflections on respondents' experiences of the issues surrounding an increase in the level of Aboriginal and Islander participation, and the level of indigenous control over Aboriginal and Torres Strait Islander tertiary education.

There were three identifiable ways of thinking, speaking and writing about Aboriginal and Torres Strait Islander participation in tertiary education. These three competing ways of thinking have been identified around three metaphors: welfare, equity and indigenous rights. The differences between these ways of thinking were evident in two key areas of discussion covered in the interviews. The first

focused on the respondents' representations of, or the way they thought and talked about, Aboriginal and Torres Strait Islander people and 'culture'. The second centred on how respondents conceptualized and articulated the role of tertiary education and Aboriginal and Torres Strait Islander participation. The following section describes and discusses the three different responses and is based on transcripts of the interviews with respondents.

EDUCATION AS WELFARE

Education as welfare was one of three metaphors identified. It was characterized by a representation of Aboriginal and Torres Strait Islander people as 'inferior' and therefore as welfare recipients. In other words, it placed an emphasis on their participation in special tertiary education units as the provision of welfare. Indigenous culture was perceived as static through representations of 'traditional Aborigines', and through perceptions of the role of education as the preservation of traditional culture. A dichotomy was made between those from 'traditional' or remote communities, and the 'urban' Aboriginal or Torres Strait Islander person. The 'true Aborigine' was represented as continuing the cultural traditions of the pre-colonial era. Aboriginal students became categorized either as traditional or non-traditional, while some were excluded as they fitted neither category. The following quotes from two of the respondents reflect this metaphor of welfare:

[Referring to Aboriginal educators] I think it is rare [. . .] to find an Aboriginal person initially who has the breadth of skills in the Northern Territory. I mean you may be able to bring someone up from down south.

The problem often is that the trainees are pushed beyond their expertise [. . .] what is really going to happen is that you're setting them up for a fall; they haven't got the knowledge.

I mean our tribal students come with fairly little formal training, not very fluent in, rich in, skills in English and oral communication. So that was a problem for me, but on the other hand, we have some very good urban students that come to us and in many ways they are a lot more sophisticated than our students, I mean our tribal students.

The following comments from two respondents reflect the ways in which Aboriginal and Torres Strait Islander people are represented as 'welfare' recipients, and the way 'traditional' Aboriginal people are perceived as the real 'Aborigine':

I think that there's a lot of expectations that I will [. . .] get them up to scratch [. . .] we're in deficit and we need topping up and so on.

and so because that agenda has been given by urban Aboriginal people, the longer that the agenda gets driven the further and further it gets from the needs of traditional Aboriginal people. And that's what's been happening.

A major focus of this way of seeing tertiary education is how to compensate for cultural difference. The Aboriginal and Torres Strait Islander student is represented

as the 'traditional' indigenous person and a cultural opposite of the European person. A dichotomy is created and Aboriginal people are represented as essentially culturally different to non-Aboriginal people. They are perceived as having different needs deriving from these cultural differences.

From this perspective the role of the tertiary educator becomes that of a 'missionary' bringing enlightenment and civilization to the indigenous student. The Aboriginal and Torres Strait Islander student is represented as someone who has a poor level of standard English language skills, who does not attend classes regularly, who turns assignments in late, and who needs more academic support to compensate for educational and cultural deficiencies. This welfare metaphor was not the most common among the respondents. However, elements of the welfare representation of Aboriginal and Torres Strait Islander participation remain a significant characteristic of tertiary education in northern Australia.

INDIVIDUAL RIGHTS AND EQUITY

The emphasis among most respondents was on equity, and on the numbers of Aboriginal and Torres Strait Islander people enrolled in tertiary education in contrast with the general population. The conceptualization of tertiary education was based on rights to access, participation and educational achievement. Aboriginal and Torres Strait Islander people, from this perspective, were represented as a disadvantaged group. Indigenous cultures were conceptualized within the context of a multi-cultural policy which emphasized the expression of visible signifiers such as food, song and dance. Education was viewed as a means of overcoming indicators of inequality and marginalization.

Major emphasis was placed on skills-based training for particular employment, and on students gaining specialized training and receiving academic qualifications. This was presented as a means of diminishing the indicators of social inequality such as employment, income, health, housing and rates of imprisonment. The following two statements from respondents are characteristic examples of equity as a dominant metaphor for Aboriginal and Islander participation in tertiary education:

This amazing emphasis and push towards competency-based education, which I think is almost the antithesis of primary health care. The bureaucrats and senior management that I'm talking about, they want measurable outcomes.

The management and the people that want these tangible outcomes, they want to be able to [...] define exactly what the health workers can do at the end of the course, so they can still control it.

The emphasis on equity as the primary role of tertiary education is founded upon the idea of the individual's right of citizenship within the nation. The educational practices associated with an emphasis on equity are an increased focus on educational access, participation and outcomes in relation to those groups identified as disadvantaged. As reflected in the excerpts above, from this perspective there were

three main aspects to Aboriginal and Torres Strait Islander participation: training and accreditation; education as the acquisition of Western knowledge; and tertiary education as a means to employment. The educational process was seen as the gaining of academic competence through a prescribed curriculum. Although the curriculum content remains Eurocentric, the students are encouraged to interpret and apply the content to their own cultural contexts.

When set against the indicators of inequality in health, housing, employment, and imprisonment, it is not surprising that tertiary education is perceived as the salvation for Aboriginal and Torres Strait Islander people. However, the representation of indigenous people as disadvantaged presents the tertiary educator with the challenge of preparing these marginalized students to compete in the mainstream labour market. This emphasis on equity was the most pervasive metaphor amongst staff of the educational institutions involved in the research.

INDIGENOUS RIGHTS

A third emphasis among some participants centred around the metaphor of indigenous rights. From this perspective there is a greater focus on the level of indigenous control over tertiary education. This is founded on the collective right of an indigenous minority to determine the shape and content of its education. The emphasis, therefore, is more on the equitable distribution of educational resources, and on principles of self-determination and control over resources and educational institutions.

The following are examples of responses from two participants reflecting an emphasis on indigenous rights as a metaphor for Aboriginal and Islander participation in tertiary education:

The teaching must be in [the area of] language. The lecturers need to be developing competency in language, on-going development in language competency.

I'd like to see Aboriginality recognized as a criterion [for the selection of teaching staff], but at the moment, it's not being recognized.

In this third way of thinking and talking about Aboriginal and Torres Strait Islander participation in tertiary education, there is an emphasis on the indigenization of educational institutions, and on the inclusion of an indigenous curriculum. This is presented as a means by which the tertiary education process may be able to avoid the assimilatory forces of mainstream tertiary education. Nevertheless, this perspective on tertiary education also stresses that indigenous students must be able to critique and master the mainstream curriculum. However, the degree to which this emphasis on indigenous rights can be offered as a viable alternative within tertiary educational institutions is dependent upon the implementation of collective rights. This involves the allocation of human, material and financial resources for the development of new courses and curricula, along with the flexibility to incorporate Aboriginal and Torres Strait Islander staff within the tertiary

institutions. This staff initially may not have the academic qualifications and professional experience normally associated with the tertiary teaching profession.

When there is an emphasis on indigenous rights the focus of attention is shifted from the student to the structures and practices of the educational institutions, and to the control of human and material resources. In the past it was these structures and practices which marginalized Aboriginal and Torres Strait Islander people in tertiary education.

While relatively few respondents placed emphasis on this metaphor of indigenous rights, it was evident that it is becoming a significant challenge to the more dominant ways of conceptualizing Aboriginal and Torres Strait Islander participation in tertiary education. The emergence of this perspective has become the basis of many conflicts in tertiary institutions over staffing, courses and curriculum, and management. It also has facilitated changes that have enabled the expression of indigenous rights through increased numbers of Aboriginal and Torres Strait Islander teaching staff, and through greater indigenous control over tertiary education.

A question of rights

The dominant contemporary representations of Aboriginal and Torres Strait Islander people have been founded upon indicators of relative disadvantage within the Australian population. This has included tertiary education participation and outcomes. These indicators have been presented by successive governments as unacceptable levels of inequality. 'A fair chance for all' has been a phrase adopted by the Department of Employment, Education and Training, the federal government agency charged with responsibility for providing resources for tertiary education (DEET, 1990). The phrase is based on Australian folklore which suggests a national ethos of fairness, of giving every person a 'fair go' or a chance to achieve. In government policy on tertiary education this has been expressed through an emphasis on equity. The representation of Aboriginal and Torres Strait Islander people as a disadvantaged group, and the current emphasis on equity in tertiary education, has been significant in shaping the way indigenous people have been able to participate in tertiary education.

With the emphasis on equity and individual rights, the goal has been to overcome the relative disadvantage of Aboriginal and Torres Strait Islander people within the nation state. This contrasts with a representation of Aboriginal and Torres Strait Islander people as an indigenous minority group which emphasizes indigenous rights. The latter emphasis seeks to address the ethnocentric nature of mainstream tertiary education and the intrinsic rights of an indigenous minority group to control its own processes of education.

There are two distinct areas of difference in the way respondents in this research conceptualized Aboriginal and Torres Strait Islander participation in Australian tertiary education. These distinctions centre around the rights of an individual as a citizen of the nation to have an equal opportunity to participate in

tertiary education, or, alternatively, the collective rights of indigenous peoples as a group to take control of their own education. The former represents access to tertiary education as a right of all citizens. The latter represents the rights of indigenous peoples to oversee an equitable proportion of educational resources, and to make choices over the processes of their own education.

During the past decade Aboriginal and Torres Strait Islander participation in tertiary education has been significantly influenced by representations of Aboriginal and Torres Strait Islander people as a disadvantaged group. Also what has constituted the 'traditional' indigenous culture continues to determine the shape of tertiary education in northern Australia. The term 'traditionally oriented' is still used to refer to communities in remote areas. The educational needs of these communities have been conceptualized differently to those of 'non-traditional' Aboriginals or Torres Strait Islanders living in urban settings. The remote area community is represented as the remnant of traditional Aboriginal or Torres Strait Islander culture. The emphasis of tertiary education in these contexts is to preserve and maintain the traditional, in contrast to non-traditional settings where the goal is integration into the dominant culture.

Up until the 1980s the major focus of education for Aboriginal and Torres Strait Islander people was the provision of welfare. This was founded on a conceptualization of education as a basic human right and a means to alleviate poverty. The dominant representations of Aboriginal and Torres Strait Islander people in this era were those reflecting an 'inferior' status and describing them as welfare recipients. This limited the level of participation of indigenous people in tertiary education. Over the past two decades there has been a gradual shift away from a welfare perspective. Aboriginal and Torres Strait Islander people more recently have been represented as a disadvantaged group, and the emphasis has changed to individual rights. However, when tertiary education is founded upon the rights of the individual, with an emphasis on equity, indigenous education is conceptualized as a means of overcoming indicators of inequality. Within this mode of conceptualization, the dominant experience of Aboriginal and Torres Strait Islander people in tertiary education has remained assimilatory.

More recently, and clearly associated with the International Year for the World's Indigenous People, and with the emergent indigenous rights movement globally, there has been a competing conceptualization of tertiary education. From this perspective there is a greater emphasis on indigenous rights. However, across Australia this conceptualization has been sporadic and uneven, varying between regions and institutions, and has not been able to achieve significant inroads into parts of northern Australia.

Some institutions have been responsive to the call for the recognition of indigenous rights. This has led to a far greater level of indigenous control over the management and administration of some Aboriginal and Torres Strait Islander tertiary education programmes, changes in the curriculum to incorporate an Aboriginal and Torres Strait Islander perspective, and the employment of

Aboriginal and Islander educators. However, collective rights have yet to achieve the level of acceptance accorded to individual rights in Australia.

Within educational institutions successful claims to collective rights have been limited and have clearly encountered resistance. While governments supplement funding to educational institutions which address disadvantage, the focus of such education is on diminishing difference as a means towards diminishing disadvantage. This is in contrast with an indigenous rights perspective which aims to correct the ways in which educational institutions have marginalized Aboriginal and Torres Strait Islander people.

Indigenous rights require protection through law. Institutional and legal changes enable the recognition of the rights of a collective group to maintain differences such as those of a linguistic, legal, religious, economic, political or cultural nature. The legal protection of collective rights facilitates self-determination through economic, political, and cultural autonomy and independence.

Conclusions

This paper has provided a brief introduction to Aboriginal and Torres Strait Islander participation in tertiary education in Australia. This has been a history of exclusion and marginalization, as Aboriginal and Torres Strait Islander peoples have been limited to the provision of a basic education as a fundamental human right within the welfare state. However, over the past decade, there has been a shift in policy with a greater emphasis on equity. This has been expressed in the form of 'A fair chance for all' to participate in tertiary education in Australia (DEET, 1990). This has contributed to a significant increase in Aboriginal and Torres Strait Islander participation in tertiary education. However, there has been very little change within the tertiary institutions to accommodate this increase, therefore the experience of most Aboriginal and Torres Strait Islander students continues to be one of conforming to the status quo.

This shift towards an emphasis on equity has been founded upon individual rights of citizenship since the mid 1980s. Nevertheless an emphasis on individual rights has not contributed to the realization of indigenous rights for Aboriginal and Torres Strait Islander peoples. Indigenous rights as a collective right place an emphasis on increasing the level of autonomy, self-management or self-determination of the collective.

While there are no longer religious mission organizations controlling the lives of Aboriginal and Torres Strait Islander people, the 'missionary educator' and tertiary institutions continue to influence indigenous people through their control over knowledge and the processes of education. I therefore conclude that in mainstream tertiary education in northern Australia there have been only minor shifts away from an ethnocentric curriculum base. While there have been some new courses incorporating an indigenous perspective, and some Aboriginal and Torres Strait Islander educators have been partially employed within tertiary institutions, tertiary education remains assimilatory towards the dominant Eurocentric culture.

Improvement in tertiary education in Australia is evaluated on the basis of the number of Aboriginal and Torres Strait Islander students enrolled, and on the number of graduates. The processes and content of this education are founded on the knowledge and skills that are believed to be required for the employment of Aboriginal and Torres Strait Islander people within an increasingly deregulated labour market. With an emphasis on equity, tertiary education is represented as a means of empowerment for individual Aboriginal and Torres Strait Islander students. This is founded on the assumption that, once the dominant forms of knowledge have been mastered, the student will be able to gain access to employment and the associated social benefits within Australian society.

An alternative perspective has emerged in recent years with an emphasis on indigenous rights, founded upon the collective rights of minority groups. It questions the assumptions of individual rights and equity and seeks to incorporate a diversity of perspectives and knowledge bases within tertiary education. The indigenous rights movement aims to increase the level of indigenous control over Aboriginal and Torres Strait Islander education. However, this is limited by the legal status which has been accorded to indigenous rights in Australia.

The concept of indigenous rights seeks to address Aboriginal and Torres Strait Islander participation in tertiary education through the allocation of an equitable proportion of educational resources, control over these resources, the employment of Aboriginals and Islanders as educators, and the development of an indigenous and inclusive curriculum in tertiary education. The idea of indigenous rights challenges the assimilatory and Eurocentric nature of mainstream tertiary education in Australia. This involves a shift towards a greater level of participation in the management, administration and delivery of mainstream tertiary education by Aboriginal and Torres Strait Islander people.

In summary, I have sought to demonstrate the ways in which Aboriginal and Torres Strait Islander people are represented as the disadvantaged group within tertiary education. I have sought to critique how this representation has shaped the experience of Aboriginal and Torres Strait Islander participation in tertiary education in northern Australia. From an indigenous rights' perspective, however, Aboriginal and Torres Strait Islander people would be valued as the holders and conveyers of knowledge, and entrusted to manage its production and conveyance in the tertiary sector. When, in Australia, we can go beyond an individual rights perspective, couched in the Australian mythology of 'a fair chance for all', then we may be able to move towards the recognition and attainment of indigenous rights.

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BASIC EDUCATION AMONGST

NATIONAL MINORITIES:

THE CASE OF THE YI

IN SICHUAN PROVINCE, CHINA

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Introduction

This paper offers a descriptive analysis of formal basic education provision amongst the Yi people who live in mountainous areas in the south-west of Sichuan Province in China and some reflections on the problems of educational provision for minority groups. Enrolments in primary school amongst the Yi remain well below universal levels and the drop-out rate, especially amongst girls, is considerable. The levels of achievement of Yi students at the end of primary school are well below those of Chinese pupils living on the plains. The physical condition of schools is poor, and many of these school buildings were originally intended for other purposes. A number of steps have been taken to overcome some of the main problems. These include sanctions against families who withhold children from school, subsidies to reduce the direct costs of schooling, the introduction of girl only classes and special boarding arrangements, and regional incentives for teachers to retain girls in the classroom. This case study concludes with a discussion of some of the questions raised by the analysis.

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Background

China has over fifty national minorities mostly located around the periphery of the country and in the more remote and inaccessible parts of the interior. The Yi population live in mountainous areas spread across Yunan, Guizhou and Sichuan Provinces in China. The best estimates suggest that altogether they number about 5 million people of which 1.5 million live in the Liangshan mountains around Zhaojue where this study was based. Zhaojue is amongst the poorest 100 counties in China with an income per capita less than one tenth that of the richest counties. In terms of wealth it is in the middle range of income for autonomous regions. About 30% of rural families are estimated to live in conditions below national minimum standards of nutrition and shelter. The climate is harsh as a result of the altitude (up to 3,900 metres above sea level) and the terrain is rugged, making communication difficult. Towards the end of the 1980s illiteracy rates amongst the Yi were about 46% for males and 78% for females (cited in Kwong, 1989, p. 95).

Yi society before liberation was essentially feudal in character. Traditional leaders controlled the use of the land, and labour was provided by serfs bound to the landowners whose status was inherited. Subsistence farming was the main occupation. Yields were low and methods primitive. Rival clans competed and fought over the small quantities of essential commodities imported from outside the area, such as salt. Since liberation, the State has taken responsibility for the administration of the area and has replaced traditional governing structures with those common in other parts of China, thus creating a local bureaucratic administration which exists alongside a party organization. Agriculture has been modernized at least in part, and livestock and cash crops have become important sources of revenue.

Zhaojue county covers seven districts with a total population of about 200,000 grouped in 47,500 families, of whom over 96% are Yi. Most of the remainder are Han Chinese. Population growth rates officially appear to average around twenty-five per thousand, having fallen from over forty per thousand in the early 1980s. The death rate is reported at approximately eleven per thousand. Males consistently outnumber females in the population by 4% to 5%. The national family planning policy applies in Zhaojue but is not strictly implemented. A farming couple are allowed to have three children. Data from field studies indicate that it is quite common to have more than three children, and that the real rate of population growth is likely to be larger than the official figures indicate (Lewin, et al., 1994b, p. 116).

Like many other national minority areas, the social and cultural environment in Zhaojue is impoverished. Those with any educational qualifications work mainly in the education system. There are very few technically qualified staff, and they are concentrated in the county town and in a few factories. There are only two people with formal engineering qualifications in Zhaojue. Before 1980 almost all of the farming population was illiterate. A literacy campaign was conducted in the early 1980s in the Yi language. Though it is claimed officially that most young and

middle aged people can now read the Yi script, there is no independent verification of this and it is probable that some of those who acquired literacy have subsequently lost it. There are virtually no books, journals or broadcasts in Yi. The mass media in Chinese are not easily accessible; there are no television sets and few radios in most areas

Two areas were selected for detailed case studies within Zhaojue. These were Bier and Sikai. Bier district is thirty-two kilometres north of Zhaojue County. The Bier River goes through the district from north to south. The only flat land is along the bank of the river and the rest of the district is mountainous, with an average elevation of 2,500 metres. Amongst the eleven sub-districts three have no radios and another three have only unmetalled roads. Four of the eleven sub-districts have no electricity. The population of 30,000 is almost entirely Yi, with a low population density of only sixty-four people per square kilometre. Bier is almost entirely dependent on agriculture, which is severely constrained by the mountains and climate. It remains a very poor district.

Sikai District was the other case study area chosen. It lies more than twenty kilometres south-west of Zhaojue County town. Several small rivers run across the district and it has a relatively large plain area. On average it is 2,200 metres above sea level, is a little warmer than Bier and has a higher rainfall. Communications are slightly better with more roads, although three of the nine sub-districts have as yet no bus service. Two thirds of the sub-districts have electricity. Like Bier, Sikai is almost entirely populated by Yi people. The total population in 1991 was estimated at 35,400. In Sikai the number of females has only recently begun to approach 50% of the total population.

Sikai is marginally more developed than Bier, but it is still very poor and educationally undeveloped. In 1991 there were only three college graduates and approximately 200 upper secondary graduates in the district. Only 2% of the population had completed lower secondary school. The medium of common communication is the Yi language and few people understand standard Chinese except officials and teachers in both districts.

The school system

Before 1950 there was no formal schooling amongst the Yi in Zhaojue. What education there was consisted of informal learning at the feet of a small number of special members of the community. The master, who was called a *bimo*, taught his followers, who were mostly drawn from his immediate or extended family. There was no systematic educational provision for other members of the community drawn from lower status groups. Traditional learning was religious, based on customary beliefs, and undertaken only in Yi language. What literacy there was in Yi (estimated at 3% in the 1950s) was concentrated amongst the land owning classes. Though the Yi language has a long history of more than one thousand years, it is an irregular language, and the written form used by the different *bimo* varied.

The government of Xichang Prefecture established the first primary school in Zhaojue in Sikai District in 1940. It enrolled thirty boys but it soon closed. A new government was established in June 1950 after Liberation with a Department of Education. Three primary schools were set up by the end of the year. Schooling was free and all costs were paid by the government. During the Great Leap Forward (1958), and during the Cultural Revolution in the 1970s, schools were supposed to exist in virtually every village. In reality many were not in special buildings and sustained financial support was not forthcoming.

Today, Zhaojue has two complete secondary schools (with both lower and upper secondary grades) and one lower secondary school which is reserved specifically for Yi students. There is also one teacher in-service training school. All these institutions are located in the county town. The two primary schools in the county town are former provincial key point schools, and the seven central primary schools at district level are all complete schools (grades 1 to 6). Three of these schools offer lower secondary classes. Only ten of the remaining sixty-two *xiang* (sub-district) level central primary schools are complete. The remaining village schools are widely dispersed and are often shared by more than one community. The typical village school offers only grades 1 and 2.

In Bier, of the thirty-seven primary schools only the district central primary school offers all grades. Most of the eleven *xiang* central primary schools cover grades 1 to 3. If students who have finished three-year schooling want to continue their education, they must pass entrance examinations and transfer to other districts or county town schools. The twenty-five village schools usually only offer grades 1 and 2. There is one school for each large village, otherwise several villages share schools. The county government has ruled that no school should be established in places where there are fewer than twenty-five students because of the shortage of teachers. As a result there are no schools in the deep mountainous areas.

Sikai has twenty-eight primary schools, including one district central school and eight *xiang* central schools. Only the district school and three *xiang* central schools are complete. The nineteen village schools cover grades 1 and 2 as in Bier. There are a few schools in high mountain areas. The local regulations on minimum school size are the same as in Bier. The primary schools in the county town are the largest, with enrolments of more than one thousand pupils. District central primary schools typically have six classes and 200 pupils, though some are larger. Bier central primary school has twelve classes and over 400 pupils. Most village schools have a single classroom (occasionally two) with one teacher and a couple of dozen pupils.

As in most other rural areas in China, the management of the school system is undertaken by principals located in central district primary schools (Lewin, et al., 1994a, p. 202) Separate vice-principals are responsible for instruction in the central school and instruction and administrative work in other schools in the district. Central schools therefore oversee staffing, check attendance records, allocate funds granted monthly by the county Bureau of Culture and Education to the schools in

the districts, place and transfer teachers to the different schools, authorize the hiring of substitute teachers, and promote teaching and educational development activities in the district.

Though the physical condition of school buildings has been improved significantly, the quality of what exists remains well below national standards. Village schools are often simply four walls and a roof, and many are converted from other uses, such as cattle sheds. At least 30% of pupils in rural areas lack desks and benches, and we estimate that in village schools more than half the children sit on the floor as there is no furniture. About 300 teachers in the county do not have access to a teacher's room, and 200 do not even have proper beds. There is no physical education equipment, nor other teaching aids of any kind in most of the village schools, and there are no library books.

The immediate reason for the poor conditions is lack of adequate funding. Paradoxically, the average educational expenditure per pupil in the area is not particularly low (partly because Zhaojue has a large proportion of government teachers whose salaries are higher than those of *minban* and temporary teachers). However, expenditures on personnel account for 96% of the total budget (including the government aid for boarding provision) in Zhaojue, thus only 4% is left for operating purposes. This is not enough to cover office expenditure and is insufficient to support the improvement of conditions in the schools.

ENROLMENTS

Bier had 1,700 pupils enrolled in primary school in late 1991, 14% of whom were girls. Though the total number enrolled was growing, the proportion of girls appears to have been falling. Enrolment decreases rapidly as the grades increase. There were 438 new students for grade 1 in 1984, but only ninety-two were still enrolled when the class reached grade 5 in 1989. Only seventeen were promoted to grade 6. The following year, grade 5 enrolments were even lower.

The highest attrition rate appears to take place between grades 3 and 4—on average grade 4 is 50% smaller than grade 3. The reduction in numbers between other grades is between 25% and 30%. *Xiang* central schools and village schools usually only enrol grades 1 to 3. Further progression involves a change of schools, which may be both inconvenient and expensive in transportation costs. Places for students in these schools are also limited. About 80% of students enrolled in grade 5 did not progress to grade 6 because the latter grade had only just been introduced.

A similar picture emerges from Sikai, where enrolments decline even more rapidly through the grades. Grade 5 is often less than 20% of grade 1 five years earlier. The highest rate of decline is between grades 1 and 2, where on average grade 2 is about 50% less than grade 1. The proportion of girls is very low and fell to only 11% in 1989/90. In 1990/91, there were no girls at all in grade 6.

ACHIEVEMENT

The available data on levels of educational achievement suggest that performance is very poor. The average scores in both Chinese and mathematics for schools in Zhaojue were lower than the passing scores recorded in the last four years—thus more than 50% were failing according to this definition. Achievement does not appear to have improved significantly over the last five years and there remains a large gap in performance between the town and rural schools. Typically the lowest scores in Chinese language in the town schools are nearly double the average for the rural schools (where Chinese is not spoken outside the school). In mathematics the lowest scores in the town are comparable with the rural averages.

County schools have the highest averages, with the highest number of pupils scoring over 80%. District central primary schools fall in the middle rank, and the *xiang* central schools have the worst performance. Some *xiang* central schools in Zhaojue, in more than twenty years of existence, have never had a pupil admitted to a lower secondary school. In the twenty-one *xiang* central schools, the great majority of pupils score lower than 40% (82% score lower than 40% in Chinese and 95% score lower than 40% in mathematics) in the annual tests. It should be remembered that pupils in these schools are already from selected groups since many have dropped out by the time they reach grades 5 or 6.

The county requirement is that sixth grade pupils taught in the Chinese medium (System 1—see below) should reach a grade 4 level of achievement in the Chinese language in order to graduate from grade 6. Sixth grade pupils in the Yi medium (System 2) should reach grade 4 level in Yi. The acceptable level of performance is set two grades below that of children in schools on the plains to ensure that some are accepted into lower secondary school. Despite these guidelines, teachers at Bier central primary school confirmed that most of their sixth graders in System 1 could not reach grade 3 level in Chinese. Educational achievement in village and *xiang* schools is even worse. We examined the second grade children in Chinese in System 2 at one of the central primary schools, and found most of these children were unable to read or understand simple Chinese. Class teachers indicated that less than a third would reach the passing level for that grade. Low achievement is inseparable from language problems. The Yi language is very different from Chinese and Yi children live in a Yi speaking environment with no contact with native speakers of Chinese.

Other special measures that reflect these low levels of achievement include concessions for entry to colleges. The admission standard is lowered by twenty points for Han students living in Yi areas, and by forty points for Yi students in order to maintain the proportion of students from underdeveloped areas and minority groups. The Zhaojue government has a similar policy for county secondary school admission.

TEACHERS

In Zhaojue as a whole, there are about 1,000 teachers in primary schools. Most of these teachers are full-time, and about one third are substitute teachers or are *minban*, who are paid from local funds. The teaching force is predominantly Yi. More than two thirds of all government teachers are Yi, and the *minban* and substitute teachers are all Yi and are predominantly male. Over 50% of teachers are under thirty years old and are therefore recently qualified.

About 20% of teachers are of senior rank and another 20% are classified in the first rank. These teachers are concentrated in the county town and district central primary schools. There are twenty-six senior teachers in one of the county town primary schools, which is more than half of the total! Unqualified teachers are mostly to be found in the incomplete village schools. In Bier about 70% of teachers reach minimum qualification levels and in Sikai more than 80% which compares well with national averages.

Overall, the pupil-teacher ratio in Zhaojue is claimed to be 13:1, and on average there are 1.9 teachers per class. Neither the teacher-pupil ratio nor the number of teachers per class reaches the level suggested nationally by the State Education Commission. Actual pupil-teacher ratios are likely to be greater since it appears that qualified teachers who are not teaching are often included in the count. Our case study data suggests that in Bier and Sikai, pupil-teacher ratios are about 17:1, which is closer to the national average of approximately 20:1. They have not changed markedly over the last ten years. The average teacher class ratio for Bier was 1.2:1 and for Sikai 1.6:1. These ratios are common in Chinese primary schools—in the case study schools every teacher taught between fifteen and twenty periods out of twenty-five or more. Pupil teacher ratios are lower, and class teacher ratios higher than they would be if multi-grade classes were organized in Zhaojue. It is not unusual for there to be less than ten pupils in each class in upper primary in rural areas but pupils are taught as separately time-tabled groups.

This brief overview draws attention to major educational problems in Zhaojue, many of which are common to other national minority areas (Kwong, 1989). Several points are clear:

- enrolments rapidly attenuate through the primary school system with high drop-out rates;
- completion rates for the primary cycle are very low, and few complete the cycle in the appropriate number of years;
- girls constitute a small proportion of total enrolment (10%–20%) and few succeed in completing primary school;
- class sizes in rural schools may be very small and multi-grade teaching is generally not used, thus costs may be high as a result;
- repetition and over-age enrolment are common;
- levels of achievement are much lower than those in non-minority areas; and the provision and retention of teachers is problematic.

Some interventions

Our research identified seven policy initiatives relating to primary education which are intended to improve access to schools and increase participation rates. These have arisen in the wake of the Compulsory Education Law of 1986 and associated legislation (Lewin, et al., 1994a, p. 33). In Sichuan the Yi and other minority groups benefited from special campaigns to raise awareness of the importance of primary schooling, make greater use of minority languages in schools, and increase the number of minority teachers (Ahmed, et al., 1991, p. 187). In the Yi area a number of specific initiatives have been tried.

First, the *xiang* level People's Congress has devised local regulations to encourage enrolment. These require that each family send a certain number of its children to school otherwise the family will be fined. In one village in the case study area the rule is that if a family has three school-age children it has to send at least one child to school otherwise it will be fined up to 100 yuan (a third of per capita income). In another village the rule is that 'If a family has two children, it has to send one to school, and if it has three, it has to send two, and so on [. . .] Farmers who do not send their children to school according to the rules will be fined one *mu* of land.' Some farmers have been fined but so far no one has forfeited land.

Second, tuition and registration fees have been reduced and exemptions given. A significant number of families are either outside the money economy altogether, or have very low per capita incomes. These families cannot afford the direct costs of schooling. Tuition fees are not officially charged at the primary level, and rural pupils (and those in some district central schools) do not need to pay the registration fee either. Schools should provide textbooks and exercise books for most of their pupils from income derived from school-run businesses. However many schools cannot raise much money since the local economy provides no opportunities for cash generation. Some teachers apparently pay for textbooks for pupils out of their salaries.

Third, special classes for girls have been organized. In order to encourage more girls to attend, some schools have formed all girl classes and have allocated additional resources to these kinds of initiatives. There is some indication that this has a positive effect on enrolment in these schools. An all girls class was established in Bier central primary school in 1987. This school paid for textbooks and exercise books for 60% of the girls in the class; provided a good home-room teacher for general subjects; and selected experienced teachers to teach special subject areas. At the end of 1989–90 school year, all these girls passed the unified county examinations for Chinese and mathematics. Their average scores were around 90%, whilst the county averages were 28% and 49% for the two subjects. The all girls class apparently performed better than other classes in the same school.

Fourth, grants have been made to improve school conditions. State, provincial and prefectural governments have provided significant funding; farmers have donated labour and construction materials. Most of the unsafe buildings have been

repaired. Although it is hypothetically possible to generate additional resources from the community to support schools, external government grants are indispensable, especially for the village schools. About one third of the peasants cannot meet their basic needs for food and shelter. None of the schools appear to be generating significant revenue from economic activity. Donations consist of local building materials and labour. Where cash costs are involved, there is usually no obvious way in which loans could be repaid, and grants are usually needed.

Fifth, special efforts have been made to localize the teaching force. In the 1960s, most teachers in Zhaojue came from other areas. A quota was applied to entrance to the four normal (teacher training) schools in the prefecture that guarantees that 65% of admissions each year are reserved for Yi applicants. About 900 graduates from the teacher training institutions are assigned to teaching positions each year in Liangshan Prefecture. Zhaojue receives about fifty new teachers through this route, most of whom were born in the county. As older Han teachers retire and 'go down the mountain' they are being replaced by Yi teachers. The proportion of Yi teachers has increased from only 3% of the total at the beginning of the 1970s, to over 65% in 1990. Substitute and *minban* teachers are all Yi, and 90% of the district and *xiang* central primary school principals are now Yi.

The problem now is to reduce turnover in the teaching force and retain teachers in the area. Zhaojue is not an attractive environment for young teachers coming from other areas since it is both rugged and, for some, culturally unfamiliar. Many of the teachers we interviewed wanted to transfer to areas on the plains or change their job. Bier authority assigns teachers from outside the area to the District central primary school or schools with better conditions along the roads. Those who have local origins are encouraged to work in the semi-mountainous areas and in the high mountains and contribute to the educational development of their home villages. The district authority grants financial aid to local teachers who have children enrolled in the District central primary school or in the primary schools in the county town. Unmarried young teachers are assigned to schools close to each other in order to create opportunities for them to socialize. Government teachers receive a subsidy worth about 25% of their salary over and above what they would earn elsewhere in Sichuan.

The last two initiatives are concerned with the introduction of a boarding system and a bilingual instruction policy. In the 1980s, boarding schools were re-established and assistance with living costs was provided for Yi pupils. Three types of boarding exist—key-point, general and semi-boarding systems. The key-point boarding system is used for classes of Yi pupils in the county town primary schools; the general boarding system exists in the district central primary schools, and the semi-boarding system is for *xiang* central primary schools (about two thirds of these offer boarding facilities). Financial assistance varies according to the type of school, and is most generous in the key-point schools. Females receive a higher rate of subsidy than males. Clothing and bedding grants are also given. Boarding is needed since many pupils have long distances to walk to school across mountain ranges.

Pupils are allocated to the different systems according to their examination results. In order to use the grant system effectively, the Zhaojue government has ruled that only Yi pupils at senior grades in primary schools whose families are in rural areas qualify for entrance to the boarding schools. Our evidence suggests that this rule is not always enforced.

The boarding schools differ in orientation. The main purpose of the key-point boarding system is to prepare children for the next level of schooling; the schools in the other boarding systems are intended to prepare children for entry into the world of work. Only the best students are expected to continue in school. The boarding system has developed rapidly over the last decade—there were only forty-three boarders in 1980, but nearly 3,000 by 1990, representing 22% of the total number of Yi pupils in the whole county. About 25% were in the key-point boarding system (including some secondary school pupils), slightly more in general boarding schools and the rest in the semi-boarding system. Boarding pupils apparently achieve better as a result of having more time to learn and more consistent attendance. They are disproportionately successful in gaining access to higher levels of education. Most of the cost of the boarding system is provided by subsidies from higher administrative levels, with only a small part granted by the county government.

The boarding system is popular with officials and teachers who believe that it is necessary for educational development. Many Yi parents cannot afford to send their children to school, or appear to be less than enthusiastic about the idea. Boarding schools help retain children in education at higher levels, and the system of streaming students into different types of boarding schools is defended by arguing that the state cannot afford to put all students in the high cost schools, and that it is appropriate to invest more in the best pupils.

Lastly, language policy is an area of special concern. Yi people have their own language unrelated to Chinese. The language of instruction in the first schools was Chinese. Most people do not understand Chinese as Yi is the basic language of communication. The Constitution and the 'Act of Autonomy in Minority Regions of the People's Republic of China' states that 'the autonomous region's government has a right to act on its own to develop education for minority people,' and to 'select for use in instruction languages from the region'. Some of the schools in rural areas started to offer Yi in 1979, and the primary and secondary schools in the county town began offering Yi for boarding classes in 1982.

Since 1986, two systems of bilingual instruction have been practised. System 1 uses Yi as the medium of instruction, and Chinese is offered as a subject from grade 2 to grade 6. The pupils are expected to master more content from Yi textbooks than from the Chinese ones. System 2 uses Chinese as the medium of instruction and Yi is offered as a subject from grade 3 to grade 6. Here, the emphasis is on the content of Chinese textbooks. There is some local variation of the two systems but the basic pattern is retained. In 1991, there were five *xiang* and two county town schools piloting system 1, with 1,200 primary school pupils involved. System 2 was used in twenty primary schools with 1,300 pupils. About 23% of the

pupils are in either system 1 or 2 schools. Chinese is the only medium of instruction for the rest of the pupils, though teachers still use Yi to explain what the children do not understand in Chinese. In 1990, the first 112 pupils graduated from the primary schools of System 1 and eighty were admitted to Yi medium lower secondary schools.

The bilingual programmes have a very short history, and problems of teaching quality, and lack of availability of written materials, are still serious. Many people continue to have doubts about the bilingual programmes, especially regarding System 1. The main criticisms made by those who were interviewed were that:

- since there are no schools at higher levels for the graduates from the schools of System 1 further education opportunities are limited;
- the examinations held for recruiting government employees or workers are all in Chinese, so the employment chances of Yi stream students are restricted;
- time spent learning Yi reduces time spent learning other subjects; and
- the Yi language is too simple to explain the complex modern world, there are problems in translation, and it is easier to teach subjects like science in Chinese rather than in Yi.

In contrast to these possible disadvantages are the positive effects that making more use of the mother tongue may have, such as raising levels of achievement, motivation and participation. Nevertheless, judgements on the educational consequences of the bilingual policy in Zhaojue require more data than is currently available. Since similar debates take place in relation to other minority groups (e.g. Zhang Yuanqing, 1985; Wang Lianfang, 1985) it would seem important to collect systematic data on this before reaching any hard and fast conclusions.

Discussion

This case study raises a number of issues that are common to the provision of education to minorities in other parts of China (Wei & Zhou, 1984). The data presented here show that despite the various efforts that have been made, enrolment and school completion rates remain very low. The rates for girls are strikingly small, especially given what is known about the direct and indirect benefits of investing in the education of females (Lewin, 1994, p. 20). The causes of poor performance on basic indicators of participation are multiple and complex. Amongst the Yi in this area they include:

- the traditional valuing of boys over girls and various cultural practices (arranged marriages in childhood, dowries, sibling care) encourage girls to drop out or not to enrol at all;
- the lack of sufficient primary school places for all children reflecting the fact that educational provision has not been regarded as a high priority in practice;
- the low quality of physical facilities and the very limited availability of educational materials which impoverish the learning environment in many schools;

- irregular attendance of both pupils and teachers, especially related to the agricultural cycle;
- the lack of quality and motivation of teachers;
- low levels of educational achievement leading to repetition, drop out and push out; and
- the problems that arise from low levels of parental literacy and the use of two languages in the schools.

Attempts are being made to address the language issue through the two systems which have been introduced. The debate on language medium is a familiar one, and has been running for a long time (Watson, 1981, p. 111). There is a predictable tension between the national language (Chinese) and the mother tongue (Yi). The latter will never have much value outside the Yi community and, though Yi language is central to Yi culture, the development of the economy is likely to depend on those who develop links with enterprises in the rest of China. These will be undertaken in Chinese. Higher levels of schooling are likely to continue using Chinese as the medium of instruction. The language question, therefore, concerns when the actual transition to Chinese should take place, and for how long it is viable to teach using Yi as the medium of instruction. It also concerns the relative costs and effectiveness of different approaches to bilingualism. Currently it is not clear what these might be, although all indications show that systems which begin the transition at a later point in the education cycle are likely to be more costly.

The interventions that are being introduced to encourage sustained female enrolment raise a number of questions. Although these programmes have been in place for some time, female enrolment remains very low. The girls who benefit from the subsidies and incentives may also include many who would be in school in any event—the girls in city schools come from backgrounds where parents are more likely to send them to school. The question is, which of the measures—girl only classes, boarding, higher allowances per child—actually make a significant difference to retention and performance. And what strategies would encourage more rural girls to attend? The fact that attendance remains so low suggests that root causes may lie outside the school system rather more than inside it. Tradition and some aspects of economic reality appear to mitigate against female enrolment. It is not clear that community level approaches are being mobilized to influence parents' attitudes. There is a dilemma here, since Yi culture would be completely transformed by more universal access to schooling for girls. Nevertheless, the Yi community has yet to embrace the idea and until it is ready to do so, change has to be in some sense imposed from the outside.

Sanctions are employed to encourage enrolment in general, and punitive measures have been taken against some parents. This approach may be bureaucratically attractive but is flawed for several reasons. First of all, it is not easy to trace large numbers of non attendees. Even if most could be identified, all could not be enrolled in the short term. Also, fines may not be appropriate for families with little or no cash income and few assets. It seems, however, that parents are gradually becoming aware of their legal responsibilities to enrol children in school. Whether

they do or not will depend more on the availability of places at school, the quality of the facilities, and the perceived value of the education offered by schools, rather than on legal sanctions that are difficult to enforce.

The relevance of schooling is perceived by many teachers as problematic. Half the teachers we questioned at Bier and Sikai central primary schools attributed lack of 'learning motivation' as the primary reason for low achievement and subsequent drop-out. This in turn they saw as related to the lack of opportunities to benefit from schooling through access to non-agricultural jobs and higher levels of education. There are very few opportunities for educated Yi students to aspire to higher studies, and very few successful role models, especially for girls. This is neither a problem that can be solved easily, nor is it restricted to the area of this case study. Cleverley (1990, p. 6) notes that this is a factor in rural education in many parts of China. However in the Yi area, positive discrimination is practised to create more opportunities than would otherwise be the case. Quotas are employed and entry requirements lowered to allow more pupils through to higher levels. The question is, should more concessions be made, or would doing so merely make it more likely that those who progress to higher levels will subsequently drop out? It would seem that any further lowering of the standard for primary school graduation is an unappealing alternative.

Low achievement levels may result in part from the short length of the school day, and from high rates of absenteeism. Transport is poor and many pupils live very far away from their schools. Classes may not commence until late morning (11:30), and end by mid-afternoon (3:30). Pupils in village schools may be in school for even less time, as many of these schools offer only two or three class periods a day. Irregular attendance is widespread and seriously disruptive of learning continuity, yet curriculum materials are designed as though attendance were continuous, and the question here is whether it is possible to design curriculum materials that are more modular and free-standing so that irregular attendees can engage meaningfully with learning that does not assume continuity of previous experience.

The great majority of teachers in Zhaojue are qualified if we judge them according to their educational background. Most are graduates of Zhaojue Normal School and other normal schools in Liangshan Prefecture. These schools have special entrance quotas and levels of achievement are low. One third of the graduates are judged unable to teach according to county officials we interviewed, and one third require additional in-service training before they are allowed to teach. What may be even more serious is that many teachers want to transfer to other fields, and as a result may not feel much commitment to their work. Teachers were asked to respond to a question asking if they would rather have another job—71% of the teachers in the Sikai sample and 50% in Bier indicated their preference was for a job outside that of the teaching profession. The average yearly income of teachers is about ten times the net average income per capita of the rural areas in Zhaojue; in spite of this, many still want to change their jobs. The reasons they gave for this included lack of respect from the communities they serve, lack of

opportunities to earn additional income, the difficulty of achieving urban residence and physical insecurity.

The actual emphasis on education in development policy depends on the quality and commitment of the educational administration. The officials we interviewed at each administrative level argued that they placed great stress on education and gave it first priority in line with national directives. Where it proves difficult to translate this ambition into practice, inadequate financial support is frequently identified as the main difficulty. In contrast, the staff of educational institutions we spoke with tended to argue that government officials 'only stress education orally but not in their actions, and they emphasize education in meetings but not after meetings'. It appears that many government officials do not want to take responsibility for education. A typical view is that 'family planning is the most difficult work to do and education is the most complicated. It is not easy to see accomplishments in education and gain recognition'. The question is, what is the level of local commitment to the development of education and are the resources made available sufficient to allow real progress towards defined goals?

Marginality may come in several forms. The Yi themselves are marginal to mainstream Chinese development, and their educational needs have been neglected in the past for this reason. Within the Yi area, core-periphery relationships exist between the towns, villages and the rural hinterland. Those who administer and invest public resources may place education high on their agenda. If this is so, it is difficult to understand why there are so many areas without reasonable access to schools and—where there are schools—to find classrooms with no furniture. Equipping such schools would require an investment which is much less than that made available for some other local development projects. The point is that the development of education amongst the Yi may depend more on the preferences and interests of relatively local groups than it does on national level support and subsidy, and national policy. Bureaucratic responses to poor system performance need to be tempered by the realization that out-of-school factors may be at least as important as in-school factors in determining the outcomes of equity in education.

Note

1. This paper is based on work reported in Lewin, K., Wang Y., Qu H., Wang L., Li J., Wu Z. and Quian J., *Implementing basic education in China: progress and prospects in rich, poor and national minority areas*, IIEP, 1994. I am indebted to the members of the team from Beijing Normal University who made this research possible. The research was supported by UNICEF and the British Council.

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INFORMAL LEARNING: A CASE STUDY

OF LOCAL CURRICULUM DEVELOPMENT

IN INDONESIA

Elias Kopong

Introduction

Indonesia is a diverse nation of 13,667 islands, over 180 million people, and at least 366 ethnic groups speaking some 700 different languages, including the Melanesian people of West Irian who alone have at least 440 separate languages. A Dutch colony for 350 years, Indonesia became an independent nation at the end of the Second World War, following three years of occupation by the Japanese.

To bring a sense of unity and cohesion to this disparate archipelago, the new government introduced a centralized, national system of education. Its underlying purpose was to forge a sense of identity for the new nation by using a common curriculum and language of instruction, and by creating a national culture based on the principles of *Pancasila*. These principles emphasize belief in one god, human rights, unity, democracy and social justice. Over the years the national curriculum became increasingly prescriptive as it attempted to incorporate western scientific knowledge alongside moral and cultural teachings (Jalaluddin, 1990; Ki Suratman, 1992). The basic challenge for the education system was to respond to Indonesia's goals for national economic development by creating a skilled work-force, while at the same time emphasizing the principles of *Pancasila* in all areas of the school curriculum.

Despite considerable success in achieving these national goals, there was a growing awareness of the need to link the curriculum to local development needs through the active involvement of local people in curriculum planning and delivery. In practice, however, it proved difficult to adapt the national curriculum in

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response to basic needs at the village and community levels. Curriculum policy was so centralized, the system of external examinations so entrenched, and the schools so overloaded with prescribed courses and materials, that local initiatives were unlikely to take place.

In 1989 the government eventually recognized this limitation by passing a new Educational Law which allowed local people to develop a supplementary curriculum for the purpose of enhancing their own particular cultural values, beliefs and practices. The law affirms that:

- (1) The community, as a partner of the government, is given ample opportunity to participate in the conduct of national education.
- (2) The specific characteristics of an education unit organized by the community shall be respected (Indonesia. Department of Education and Culture, 1991, p. 18).

The law reflected the policy of the government that the Indonesian people are not only the object of development, but also the subject. The role of the school therefore is to enhance the quality of life of the individual, and to prepare the individual to contribute to national economic goals. The government recognized the need to work in partnership with families and communities to enrich the national curriculum by incorporating local knowledge drawn from the immediate physical and social environment, and by reflecting the specific characteristics of the school and the needs of the local region (Vembriarto, 1991). Some writers have argued that in the future the national curriculum should consist only of minimal requirements including Pancasila education, religious education and civic education, while other realities experienced by learners should be determined at the local level (Vembriarto, 1991). In this way an even more direct interaction can be developed between the school and the local society.

Implementation of the new education law has encountered one significant problem. Having never in the past been given any opportunities to participate in curriculum planning processes, local people in many regions have not known how to respond to the law, and have found it difficult to effect any significant changes in the school curriculum.

Starting from this premise, my own study has focused on the development of the general senior high-school curriculum with special reference to the teaching of social science. The study was carried out with the Lamaholot people who live on the islands of Adonara, Lembata and Solor, and in parts of Flores, in the regency of Flores Timur in eastern Indonesia. The language spoken in this area is Lamaholot, and is affiliated with the Malayo-Polynesian group of languages. In total, there are about a quarter of a million people who belong to the Lamaholot culture.

As a Lamaholot person myself I am aware that my people are eager to use the opportunities provided by the 1989 Law to ensure the preservation of their cultural identity. Like many other groups, however, they have not yet been able to take full advantage of the new Law, due to lack of skills and experience. The study that I report in this paper seeks to rectify this.

Theoretical perspectives

The study begins by differentiating between formal and informal learning, contrasting them in terms of content, process and context. Cross-cultural studies generally associate formal learning with the transmission of Western knowledge by the school, and informal learning with the sharing of cultural knowledge within the society. In terms of content, the knowledge and skills attained in informal learning consist of what the older people in a society have known and inherited from one generation to another. Older people therefore comprise an important resource for children to obtain knowledge (Harris, 1984; Ninnes, 1994). Some of the content of informal learning is particular to individuals on the basis of gender, birth-order or vocation, with knowledge in areas like medicine, magic and religion not necessarily being open to everyone in the society. Instead, it may be limited to particular people depending upon their age, gender, religious status or clan affiliation. Private knowledge of this kind is not acquired on the basis of intellectual capability but on the individual's rights and position in the society. Such knowledge is not challenged using processes of intellectual analysis, but is accepted and believed. The content of formal learning, on the other hand, is derived from Western knowledge systems that are open to all, and that are subject to constant review and critical analysis.

In terms of process, informal learning is continuous. Children are not separated from adults, but participate with them in everyday life, watching and practising what they do. Learning, therefore is based largely on participation, observation and imitation (Harris, 1984; Lindstrom, 1990; Ninnes, 1991). Informal learning processes also emphasize interdependence, continuity, relatedness and intrinsic motivation. In formal settings on the other hand, the processes of learning rely more on verbal elaboration, independence, quantification and extrinsic motivation.

Informal learning occurs in real life contexts. It is present-time oriented, meaningful and purposeful (Harris, 1984; Teasdale & Teasdale, 1992). Formal learning, on the other hand, is decontextualized from the society, taking place in the contrived setting of the school. Being future-oriented it may have no immediate relevance to the everyday life of the learner, preparing students for modern economic life with its focus on competitiveness and individualism.

Because of these 'learning gaps' (Little, 1990, p. 4), any imposition of formal learning that disregards the existence of informal learning in non-Western cultures will be detrimental to the maintenance of traditional values and beliefs. While in school, children will be deprived of knowledge about their own culture. It is not surprising that formal learning processes tend to undermine cultural identity (Thaman, 1990; Watson-Gegeo & Gegeo, 1992). Writers such as Henry (1992) and Power (1992) have therefore argued that schools should play a more positive role in the preservation of culture, and that this can be achieved by giving local people greater control over the education of their children.

With the enactment of the 1989 law in Indonesia, my own study explored how this can be done in practice in a Lamaholot context. Differences between for-

mal and informal systems of learning were examined, and a model of curriculum proposed in which informal knowledge and skills could be incorporated into formal learning programmes. In this way Lamaholot children may be able to acquire new knowledge without losing their own cultural identity.

The study looked at general senior high-schools in Lamaholot settings, both government and private. Information was collected by observation and interviews during an eight-month immersion in the schools and their local communities. In addition, a 'life history' approach was used to gain information from 162 students. Content analysis of the existing school curriculum also was undertaken. The overall aim was to study the content, processes and contexts of informal learning in Lamaholot areas, and to analyse disparities between the formal and informal systems of learning as a basis for suggesting ways of incorporating local knowledge into the school curriculum.

Informal learning in Lamaholot areas

CONTENT

Knowledge and skills traditionally have been imparted to young Lamaholot children so they can learn to behave appropriately and become mature members of the society. This involves the reproduction of what the elders know in areas such as beliefs and values, social structures, farming methods, fishing, carpentry, animal breeding, hunting, weaving, cooking, traditional medicine, and magic. Except for magic, traditional medicine and ritual ceremonies, knowledge is generally public and therefore available to everyone. The belief system permeates all knowledge, playing a unifying role. As a consequence, the acquisition and implementation of knowledge is often accompanied by ritual ceremonies such as *baun newa* (the opening of a new farm); *bulun* (harvesting) and *bau laba* (cooling down of carpentry tools).

The acquisition of knowledge stresses the values of unity, harmony and co-operation. In traditional farming for example, all agricultural products while uncooked belong to an individual, but once cooked they belong to all. When groups engage together in hunting the purpose is not just the acquisition of meat but a manifestation of the social rights and obligations of those responsible for managing such an activity.

Private knowledge in realms such as magic, medicine and ritual, is acquired only by certain people. Rights to private knowledge are generally inherited, and may depend upon age, gender or birth order. Sometimes the choice of those who are to receive particular knowledge is revealed by ancestors in dreams. In Lamaholot society this is known as *ra nimo ka gere dai marin* (they themselves come and tell).

The role of ancestors is seen as important in the acquisition of both public and private knowledge. In farming, for example, a plenteous harvest is not due to soil fertility, but to the intervention of the ancestors after the *bulun* ceremony has

been correctly performed the day before harvesting commences. In this way the deep values and beliefs of the people take precedence over logical analysis.

PROCESS

In Lamaholot society children and adults share a common life-style. Children are constant observers of everyday life in the home and community, and active participants in most aspects of it. Learning processes therefore depend mainly upon observation and imitation, on participation, on listening and on advising. Each of these processes is discussed separately below, although in practice they often occur simultaneously.

Learning by observation and imitation

Children commonly watch what adults do and then copy or imitate it. Such imitation may not always follow immediately after the observation. Sometimes it may be translated into games long before real-life practice is possible. For example in hunting games, boys practice spearing a piece of wood instead of a living animal. With young girls, the *gae wata* (popcorn making) game often uses small stones instead of real corn beads.

Once children do engage in real life practice the early products may be far from perfect, and it is often necessary to eliminate errors by repetitive processes of trial and error learning. In cooking, for example, the first results of preparing rice may be thick porridge or under-cooked grains. Repeated practice may be necessary to achieve a fully satisfactory product. Because this form of learning is voluntary, mistakes do not result in embarrassment or discredit. This is different from the competitiveness of the formal school system where failure often brings shame and therefore discourages perseverance.

Learning by participation

In Lamaholot society children participate to greater or lesser extent in most adult activities, depending upon age and gender. For example in house construction or whale hunting, the involvement of children of primary school age is limited to supplementary tasks such as preparing mixtures of sand and cement for wall construction, or scooping water from the canoe. The degree of participation is gradually increased as children grow older. In all of these activities children have a relatively high degree of autonomy and independence, and learning therefore is predominantly intrinsic.

Learning by listening

Lamaholot children are exposed to a large variety of verbal information by means of oral instructions, stories, songs and direct daily conversations. Listening carefully and memorizing the information are therefore important ways to acquire knowledge and skills. In ritual ceremonies, for example, children have to memorize the prayer in order to perform it correctly at a later date. Furthermore, in

Lamaholot society oral communication, and particularly gossip, is used as a primary means of controlling behaviour. Listening, therefore, is a key learning strategy because the verbal information not only transmits knowledge and skills, but also encourages correct behaviour.

Learning by advising

Advising is a combination of verbalizing and doing. It is usually initiated by the child with the parent or other instructor, verbalizing and/or modelling the skill before the child is allowed to perform the learning task under supervision. In weaving for example, the mother or older sister verbalizes or models the skills while the child listens and observes before having the opportunity to practice the skills herself. For boys, a father might model how to row a canoe, before they themselves are allowed to perform the task under the father's inspection. When the boys make mistakes the father then explains the right way by verbalizing. In similar fashion a mother might hold her daughter's hand and teach her to weave correctly. From these examples it is clear that supervision is accompanied by correction of mistakes so that the children who really listen and observe will learn most effectively.

CONTEXT

The primary context of learning in Lamaholot settings is the home and extended family. The parents and the grandparents all play an important role, as do uncles, especially the mother's brothers. The latter have a special responsibility to contribute to the growth and maturity of their nieces and nephews, treating them as well as they do their own children. In this way children are drawn more closely into the wider family network to which they belong.

Peer groups are another important learning resource for the developing child. This is encouraged by child-care practices which allow children from about the age of two or three to be released from their care-givers to find playmates in the village. Until about the age of six years the membership of a peer group is mixed, but thereafter it tends to be gender-based.

Within the extended family setting, knowledge is conveyed not so much to prepare the Lamaholot child for a better future life, but to preserve tradition. Knowledge is passed from generation to generation to preserve continuity, as reflected in an old Lamaholot proverb: *nolon tau ro kae* (the previous generation has determined it). Although traditions are rooted in the past they are lived out in daily activities. Knowledge acquisition consequently becomes a part of ongoing life rather than being managed in a contrived learning environment. Informal learning then, focuses primarily on the past and present, rather than the future.

Lamaholot culture emphasizes harmony and co-operation as important prerequisites for survival, both in terms of co-existence with other people and with the physical surroundings. This is reflected in the various tasks and responsibilities that must be fulfilled in relation to oneself, other family members, the wider community, and the physical environment. In relation with oneself, the task is known

as *hebo baha gere blolo* (to bathe and to clean in order to grow higher). In relation to others, it is known as *soron hode* (to give and to take). Towards parents, the task is known as *hungen baat tonga belolo* (put them very high, at the head) as *ra take tite toi tana ekan hala* (without them we cannot come into this world).

By emphasizing the values of harmony and co-operation, the acquisition of knowledge and skills only becomes meaningful if it is applied to the benefit of the family and community, rather than simply being a means of establishing a sense of personal control over social situations. Being educated in Lamaholot society consequently does not affect vertical mobility within the prescribed social status system. On the contrary, only by making a contribution as an educated person to the well-being of the society is one's behaviour compatible with the values of the Lamaholot people.

The differences between informal and formal learning

Students in Lamaholot areas experience many inconsistencies between what they learn at home and in schools. The secondary school curriculum is created by a Central Board at national level and continues to be highly prescriptive. At the secondary school level it comprises a series of core and elective programmes, each of which is relatively autonomous. Most programmes stress the importance of logical analysis using a problem-solving approach in order to prepare students for higher education. Students are expected to become independent learners. Within Lamaholot areas however, these teaching strategies are more rhetoric than reality, the lack of learning resources, and especially of library and laboratory facilities, being a major hindrance to practical application. In practice, therefore, problem solving strategies are almost entirely replaced by lecturing methods where students are passive rather than active learners.

The secondary school curriculum is set to a strict timetable with the sequence of programmes constantly emphasized. There is no real opportunity for teachers to contextualize programmes to the social and cultural backgrounds of the students. Instead of focusing on local development needs then, the programmes seek to prepare students for future life in the modern economic sector. Preparation for higher education and paid employment is the primary focus. Competitiveness and individualism therefore are inculcated, and as a consequence motivation to learn becomes extrinsic. Students thus become alienated from their own culture, and are reluctant to engage in traditional farming and other self-sufficiency activities that will ensure their own survival. Instead they seek paid employment, often migrating to the city in search of elusive job opportunities.

Implications for local curriculum development

The discontinuities between formal school learning and the informal learning of Lamaholot culture are summarized in Table 1. Drawing on this information, I now

wish to explore the implications for local curriculum development. In particular, I wish to suggest approaches that will allow informal knowledge to be incorporated into the national curriculum so that Lamaholot children can acquire modern knowledge without losing their own cultural identity. I will focus on the Social Studies curriculum at the senior secondary school level, examining curriculum content, process and context separately.

TABLE 1: The differences between informal and formal learning in Lamaholot culture.

	Informal learning	Formal learning
Content	Reproduces traditional knowledge and skills	Prescriptive curriculum designed by a central board
	Integrated and holistic	Each subject autonomous and individually taught
	Some knowledge is private	All knowledge is public
	Lacks logical analysis	Analytical ability is important
Process	Based on observation, imitation and participation	Based on lecturing and problem solving
	Uses listening, advising and trial and error learning	
	Motivation to learn is intrinsic	Motivation to learn is extrinsic
Context	Stresses values of harmony and co-operation	Stresses values of individualism and competitiveness
	Preserves cultural identity	Serves economic development
	Past and present-time oriented	Future-time oriented
	Seniority principle	Qualification principle
	Learner centred	Teacher centred
	Person oriented	Programme oriented
	Learning is part of ongoing life	Learning is decontextualized

IMPLICATIONS FOR CONTENT

The Law of 1989 allows local people to create a substantial supplementary curriculum representing their cultural identity. Local knowledge should be part of the living, dynamic culture of the Lamaholot people, and should be presented in such a way that it affirms the values and beliefs of contemporary Lamaholot society. In my view this can best be accomplished within a comparative framework that allows students to explore similarities and differences between national and local knowledge. There are various strategies for doing this. In the United States for example, the Taba model has been applied in native American settings as a means of incorporating local materials into the school curriculum (McCarty et al., 1991). The strength of this approach is that it gives full recognition to local values, while maintaining a balanced input of modern knowledge. It also fosters a dynamic view of culture, and of interaction between cultures.

FIGURE 1: Suggested framework for a concept and idea-based curriculum in Lamaholot areas.

Level 3: Lamaholot leadership and government—a history

Main ideas	Key concepts	Topics
People establish rules and government to solve mutual problems. Government reflects the people's values. As a result of culture contact, Lamaholot have adapted their life-style.	Ethnocentrism, government, rules, values, <u>unity</u> , <u>co-operation</u> , <u>harmony</u> , interaction, leadership, sovereignty, culture contact, cultural relativity, culture change.	Development of Lamaholot leadership and government as related to oral history, to early contact and conquest and to modern times.

Level 2: Lamaholot changes—a history of the Lamaholot people

Main ideas	Key concepts	Topics
When two cultures meet, both are changed. Lamaholot have adapted to change by emphasizing balanced and harmonious relationships between elements in their environment.	culture, <u>co-operation</u> , adaptation, tradition, <u>balance</u> , respect, culture contact, cultural relativity, <u>unity</u> , <u>harmony</u> , ethnocentrism, culture change.	Tribal history as related to oral history, to early contact with other native peoples, to early European contact and conquest, and to the twentieth century.

Level 1: Lamaholot community—today and yesterday

Main ideas	Key concepts	Topics
A community is made up of people who co-operate to solve problems within their environment. When two cultures meet, both are changed. Interaction between cultural groups should be balanced and harmonious.	Culture, community, adaptation, <u>unity</u> , <u>co-operation</u> , <u>sharing</u> , <u>balance</u> , environment, tradition, change, interaction, interdependence.	Climate, land, plant and animal life. Traditional beliefs, rituals, human activities and institutions. Oral and written history of Lamaholot. Interactions of individuals and cultural groups in the local environment.

EXPERTS, PARENTS, TEACHERS, STUDENTS, COMMUNITY ELDERS AND LEADERS,
EDUCATIONAL ADMINISTRATORS

The table should be read from the bottom up. Underlined text represents key Lamaholot values.

Source: Adapted from McCarty et al., 1991, p. 47.

Any attempt to localize curriculum content should be made in full collaboration with Lamaholot elders and with parents. They should have full control over what aspects of Lamaholot knowledge are incorporated into the school curriculum. Ideally they will have open access to the school and be equal participants in the processes of curriculum development and knowledge transmission. It is especially important that they be encouraged to take an holistic approach to knowledge, rather than a narrow, subject-based approach.

To provide an example of how Lamaholot knowledge might be incorporated into the senior secondary social science curriculum, I have developed a framework for a concept and idea-based unit of work (see Figure 1). The unit integrates the various subject disciplines that make up the modern social sciences, and also incorporates material from the natural sciences. It emphasizes the dynamic nature of culture and of cultural interaction. All knowledge imparted to children should enrich the cultural values that the Lamaholot people wish to retain and develop. Particularly in relation to the role of supernatural beings (ancestors), the implementation of the curriculum—especially in classroom activities—should be preceded by asking for the help of the ancestors in a traditional ceremony. The ceremony reminds all the participants that the success of whatever they do is derived not only from their own efforts but also from the intervention of their ancestors. This approach depends for its effective implementation on the active collaboration of parents, teachers, students and Lamaholot elders and community leaders.

IMPLICATIONS FOR PROCESS

Helping Lamaholot children acquire new knowledge while ensuring that they hold strongly to their cultural heritage can also be accomplished by developing appropriate learning strategies. Teachers should be encouraged to use teaching styles that are compatible with the ways that Lamaholot children learn in the context of home and community life. Learning strategies that are likely to be particularly effective are suggested below. They represent a fusion of modern and traditional learning strategies, and therefore should enable Lamaholot children to acquire national knowledge, yet in a more culturally relevant way.

Small group learning

The main characteristic of small group learning is the division of a class into small learning groups in order to enhance participation. By using this approach the teacher can build on the effectiveness of traditional peer group learning in Lamaholot societies. The only caution is to avoid mixed-gender learning groups. Separate groups should be formed, and learning tasks clearly specified to ensure effective completion and enhance learning outcomes.

Lecturing

Teacher/student interaction in the classroom should acknowledge the mutual obligation that exists when a teacher transmits knowledge while the students respond by listening carefully. Listening to verbal information is a key learning strategy in Lamaholot society. When facts and knowledge are conveyed by teachers the students have a responsibility to listen and memorize, while the teacher should ensure material is presented in a clear and straightforward way. Ideally teachers will be aware of the ways parents and elders communicate orally with their children, and will seek to model their transmission of verbal information on these traditional approaches. This is not, however, to argue in favour of totally teacher-centred learning activities, but rather to suggest that in Lamaholot culture the students can be expected to attend very carefully to the teacher in those limited situations where direct oral instruction is considered necessary.

Simulation games

The basic principle of a 'simulation game' strategy is that the students are presented with information before they act it out in different roles (Joyce & Weil, 1986). This is congruent with the strategy of 'learning by advising' in Lamaholot societies, where an elder verbalizes knowledge and skills before allowing children to perform or reproduce them. To make a simulation game more compatible with Lamaholot culture, the performance and feedback should be carried out within a group, and not individually. This will protect individual students from feeling superior or ashamed because of their success or failure, thereby upholding the value of harmony.

Model of reality

The main feature of this strategy is the creation of a model that represents as much as possible the salient features of the real world (Joyce & Weil, 1986). The process commences with the teacher establishing a scenario (i.e., a description of what is occurring), followed by a lengthy period of student participation. This strategy fits well with the observation and imitation process in Lamaholot culture in which children learn by copying what they observe. By involving students in experiences that they are likely to encounter in real-life situations, they have the opportunity to apply their observation and imitation skills in order to obtain a strong understanding of a particular situation or experience. Through dealing with a real world model, students can learn more effectively and pervasively.

IMPLICATIONS FOR CONTEXT

To make school programmes more compatible with the culture of Lamaholot people, the school context should be designed in such a way that it promotes a sense of harmony, co-operation and unity. In my view this can be achieved by developing a school layout that allows students not only to obtain knowledge but also to express aspects of their own culture through such things as music, handicrafts and

ritual ceremonies. The school atmosphere should be made more like that of the children's homes and communities by allowing for many people to interact together in the planning, development and implementation of the school programme. If there is a good co-operative relationship, school staff, parents, elders, leaders and students can work together to achieve the educational goals that the community wants to achieve.

Conclusion

This paper has examined the informal learning of the Lamaholot people, a relatively small cultural community living in the regency of Flores Timur in eastern Indonesia. The informal learning in Lamaholot areas is different from the formal learning imposed by a central educational board in Jakarta. Informal learning is part of everyday life, and is used to preserve Lamaholot culture, while the formal learning is designed to help students participate in modern economic activities, even though it threatens the survival of the local culture.

In order to build a school system that promotes both the acquisition of new knowledge and the preservation of Lamaholot culture, the incorporation of informal approaches into formal learning becomes a necessity. Models and strategies discussed in this paper indicate that it is feasible to implement such an integrated approach. Certainly it is better to try and fuse the traditional with the modern, rather than to perpetuate the imposition of an exclusive national curriculum that is detrimental to the development of local Lamaholot culture. By giving the Lamaholot people the right to preserve their culture within the context of the school, Lamaholot children will be able to acquire modern knowledge without losing their cultural identity.

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THE IMPACT OF SCHOOL SCIENCE

ON THE WORLD-VIEW

OF SOLOMON ISLANDS STUDENTS

John A. Lowe

Mary is one of my best science students. She always scores highly in science examinations; her work shows a clear understanding of the principles of the subject and she has always shown a refreshing curiosity in class. We are in the middle of an interview about her responses to school science. Knowing that she is a fervent Christian, I have asked her if she has ever found conflicts between science and her Christian beliefs. She agrees that she has, particularly, but not exclusively, in the topic of evolution. She further adds that when such conflicts occur, she accepts the Biblical account rather than what she learns in science lessons. I comment that her rejection of scientific explanations does not seem to affect her performance in school science. At this point she laughs and explains to me: ‘Oh, I *understand* science. I can *do* it. I just don’t *believe* it.’

I had been teaching science in a Solomon Islands secondary school for some years and Mary’s comments, along with other experiences, set me wondering about the level of impact that school science was really having on my students. I had investigated their performance, their attitudes and their understanding of certain concepts, but had not examined at a more fundamental level the possible existence of an overall framework within which they interpret the workings of the world and everyday life. I began to think of this as their ‘world-view’. I did not—and shall not—define the term exactly, but its use implies that the students possess some underlying assumptions about the nature of reality and causality. In particular I was interested in the epistemological basis of their world-view: the sources and the form of what they believed to be reliable, valid knowledge.

It was anticipated that there might be two sets of influences at work on these students’ world-view: influences from traditional, indigenous culture (generally

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summarized by the Pidjin *kastom*, translated as 'custom') and those derived from European contact. Among the latter, two were of interest: science and Christianity. One aspect of *kastom* was selected for particular attention, namely magic. This was chosen because, on the one hand, magic can be taken to be similar to science in that they are both concerned with the interpretation and control of natural phenomena, while on the other, science and magic are commonly seen as being antithetical.

This process of selection of possible influences on the students' world-view produced three areas of concern: magic, science and religion. Echoes of Malinowski (1948) were not entirely unintended.

Background

The Solomon Islands form the central part of the arc of Pacific Ocean islands commonly known as Melanesia, stretching from the equator to the Tropic of Capricorn. This is an area of considerable cultural and linguistic diversity: Solomon Islands alone can count more than sixty distinct languages among a population of only 350,000. The country comprises many dozens of islands, but six major islands or island groups account for the majority of the land and people. These islands are mostly mountainous and covered with dense forest. As a consequence, settlement is largely confined to the coastal edges of the islands. Roads are few and in poor condition, so travel between the often widely-scattered villages is mainly on foot or by boat. An estimated three-quarters of the population depends on subsistence agriculture, with the major sources of wage employment outside the capital being in agriculture, forestry and fisheries. The capital, Honiara, is the only truly urban area and, as such, provides a startling contrast to the rest of the country. At the time of this study, enrolment in primary schools was less than 75% of the target age group, and only one-quarter of those completing primary school gained entry to secondary school.

Belief in magic

The students in this study all attended the same secondary school in Honiara, where I was teaching science. Overall, a little under half of these students lived in Honiara, although the proportion of girls from Honiara was higher than that of boys. The remainder came from all parts of the Solomon Islands, with the largest contingency coming from the island of Malaita. Entry to secondary school in the Solomon Islands is highly selective, and these students were among the most successful in this selection process. As such, they cannot be treated as truly representative of the country's students and one must be wary of generalizing from the observations that are to be presented here.

With my position as an expatriate science teacher, it was anticipated that the students might be reluctant to talk openly to me about their attitudes to magic. They are aware that science denies the validity of magic, and when asked a ques-

tion by a science teacher who is also a 'whiteman', may try to produce a 'scientifically acceptable' answer. Consequently, it was decided to use several different approaches in parallel. Loosely structured discussions on science, traditional magic and Christianity were held with six individuals and two groups of five and six students respectively. These interviews suggested that my original wariness was not justified, as the students involved were very willing to discuss the issues; however, this may have been a result of choosing students who knew me well. Some information was also obtained from more structured interviews with ninety-six students, although the main focus of these interviews was science alone and the extent to which its relationship with *kastom* and Christianity was mentioned depended on the responses of the individual being interviewed.

Over roughly the same period that these interviews were taking place, the assistance of colleagues in the English department was enlisted to obtain responses from a much larger group of students. A story, 'The curse', was created, and was presented to groups of students as a comprehension exercise. This story tells of a second-year medical student, To'uluwa, returning to his village, where he arrogantly and insensitively criticizes traditional practices, and is eventually accused of causing illness among the children, through sorcery. A powerful sorcerer, known as a Vullai'i man, is called in. He uses magic to cure the children and to put a curse on To'uluwa, who has escaped but eventually dies at the hands of thugs back in the city. The story was set in Papua New Guinea, rather than in the Solomon Islands. This was done to retain a Melanesian context while reducing the problems that might arise from the unwitting inclusion of details that the students would recognize as not authentic to Solomon Islands traditional practice. The name Vullai'i for the sorcerer was chosen, however, to evoke a widely-known tradition of magic on Guadalcanal called *vele*.

Students were asked to give written answers to questions about this story. These questions began by being directly related to the story but then became more expansive, asking for opinions and personal experiences of magic. This exercise was completed by a total of seventy boys and forty-nine girls, from 10 to 11 years of age. Brief follow-up discussions were held with two of the classes involved, to clarify and confirm conclusions drawn from the written answers.

ACCEPTANCE OF MAGIC

Responses to 'The curse' ranged from complete acceptance of the events which expressed a sense that magic was not only possible but very likely, through scepticism of such explanations, to a vehement rejection of all magic and 'superstition'. Some of the answers revealed doubt, and there was often conflict between answers to different questions by the same student. This probably reflects genuine uncertainty and confusion on their part. Among those who rejected magical causes for the events in the passage, there were some who appeared to accept magic as possible in other situations.

Coincidence between events and predictions was commonly given as the basis for accepting magical explanations:

I think the Vullai'i man's magic is working because when To'uluwa disappeared the children get well and his curse on To'uluwa that, wherever he was, would bring about his death, has come true.

Although some students claimed that, as a young educated person, To'uluwa would simply not know how to use sorcery, about one-fifth of the group of suggested that To'uluwa may have been indirectly responsible for the children's illness by angering the spirits through his behaviour: 'To'uluwa had not cursed the children but the anger of their ancestral spirits made the children ill. They were angry because To'uluwa criticized them.'

Over 40% of the students accepted the explanations in terms of magic for at least some of the events in the story, however some rejected the Vullai'i man's magic as the cause of To'uluwa's death simply because the death did not follow the pattern one would expect from sorcery:

I don't think so because if To'uluwa was dead from some kind of strange sickness that cannot be cured by the modern medicine then that was from the Vullai'i man's magic. But his death was caused by his injured wounds. That was an accident.

Overall, the answers suggested that at least half of the students accepted the existence and possible effectiveness of magic or other supernatural phenomena in causing sickness or death.

Although one or two did explicitly take the line that 'we know that disease is caused by micro-organisms not by magic', one should be wary of suggesting that the students see scientific knowledge as a reason for the rejection of magic. The obvious success of science-based medicine does not necessarily deny the effectiveness of magic. On the contrary, it can help to reinforce belief in magic. In a country of only modest medical resources, examples of the failure of 'scientific' medicine to cure or even identify an ailment are only too common. Such failures will generally not be accompanied by explanations from the doctor or clinical officer—certainly not by an explanation intelligible to the patient. Lawrence (1987) contrasts this with the behaviour of the traditional healer, who will always explain the sources of illness and will even explain failures to effect a cure in terms of counter-sorcery, thus maintaining the idiom in which he is working. The result of this is to make it clear that modern medicine, though powerful, is not omnipotent, and hence to leave space for alternative explanations and cures.

THE MECHANISMS OF MAGIC

When students were asked in interviews and discussions what they thought was the source of magical power, two types of reactions were noted. The first was a sort of blankness, as though the question had never been considered before: the magic 'just worked'. The second was an immediate identification of spiritual powers

behind magic, variously described as ancestral spirits, evil spirits or even 'Satan'. On further questioning, the first group tended to concede that magic spells did make use of spiritual powers of some sort.

Keesing (1982) describes the relationship between ancestral spirits and the magical powers of the living as a key element in the religious beliefs and practices of one Solomon Island society, the Kwaio of Malaita. According to the Kwaio, magical influence over a particular aspect of life originated with a particular ancestor, and it is only through the will of that ancestral spirit that the living can continue to exert that influence. Ancestral spirits, in turn, are the basis of the religion—indeed the whole cosmology—of the Kwaio. At the same time, however, Keesing points out that much of the common magic is carried out without the need for conscious reference to the spirits; it has moved from the realm of the spiritual to that of technology—at least at the immediate level:

Magic is conceived by the Kwaio as, on the one hand, one of a number of kinds of interaction the living engage in with ancestors, a form of transaction. On the other hand, magic is viewed as one kind of technology ... Magic is relatively automatic in its operation (though the Kwaio neither know nor care how it might actually 'work'). If one knows the spell and a correct validation, the magic should normally 'work' if it is correctly performed. (Keesing, 1982, p. 52–54)

A similar point was made by Hogbin (1939, p. 107) in a study of pre-Second World-War North Malaitans. For the students in the present study, this separation of the spiritual aspects of magic from its technological application may provide a useful way of resolving the dilemma created by the vehement rejection of traditional religion demanded by the adoption of Christianity, while at the same time 'knowing' from personal experience that magic does work. Chowning (1977) describes the use of 'impersonal magic', rather than dealing with gods and spirits directly, as characteristic of Melanesia, and it is easy to see how this would allow the use of magic to continue when the connections with traditional religious beliefs have become unacceptable.

Keesing's view of Kwaio society appears to contradict Malinowski's statement that all primitive societies possess both science and magic (Malinowski, 1948) insofar as Keesing blurs the distinction between these categories. Malinowski suggests that people see ancestral spirits as existing in a separate realm from human beings, not normally interfering in human affairs but available to be called upon in times of need. In most activities their existence can be forgotten about and the routines of daily life are controlled by the knowledge which Malinowski classifies as science. Keesing, on the other hand, insists that ancestral spirits are as much part of the Kwaio 'real' world as are the living, and that all activities must be carried out with the need to propitiate these spirits kept in mind. Certain aims can only be achieved by going through prescribed rituals, and it is perhaps these acts that we might describe as 'magic', however the mechanism by which these acts achieve their end is the same as that which controls all daily existence: the actions of ancestral spirits. Other writers have made a similar point about various Melanesian societies: spirits are part of the physical world, continu-

ally present, rather than occupying a supernatural or transcendental realm (Hogbin, 1964; Chowning, 1977; Stephen, 1987).

But these acts of communication between human beings and spirits are also the basis of religion, so that the boundary between magic and religion also becomes indistinct. Chowning (1977, p. 63) declared of Melanesia in general that 'it is impossible to draw a clear distinction between magic and religion', while MacDonald (1984, p. 196) concluded that 'magic may be regarded as the characteristic form of religion in Melanesia'. Perhaps the attempt to separate magic, science and religion in traditional Melanesian societies is more of an attempt to impose European divisions where they do not really exist. Other writers have also emphasized the integrated nature of the Melanesian world-view and the role of magic in everyday activities (Whiteman, 1984; Fugmann, 1984). It must be stressed that the students in this study have not been brought up in the 'traditional' sort of society beloved of anthropologists. Nearly all are at least third or fourth generation Christians. Nonetheless, many of them insisted on the reality of their ancestral spirits and some have recounted to me how these spirits continue to play a part in everyday human activities:

For the ancestors, I mean, they, sometimes, they're very helpful, yeah? If somebody wants to, you know, we believe in black magic. [. . .] If somebody wants to kill you or something, they can still protect you. Say, you know, sometimes in Malaita, if [. . .] you are travelling on a road [. . .] in a place a bit far from home and then sometimes there will be people on the road, or some other [. . .] devils, or they are roaming around too. Then, if you happen to come across this place where they are really bad, something that can kill people, a spirit or something [. . .] the ancestors usually give you a warning. They can either make you afraid so that you turn back and go back to the village, or make something come behind you, like a dog running or something after you. And then you can walk fast and then you can miss the chance of that [. . .] whatever, wanted to spoil you or kill you.

Other students have described encounters with spirits, in dreams or near traditional shrines, or how they have heard the voices of the half-spirit, half-human creatures said to inhabit the forests: the *kakamora* of Makira or *dodore* of Malaita. The spirit world of tradition exists in a very real sense for many—perhaps the majority—of students.

Yet another point commonly made about Melanesian society is that its integrated world-view is essentially religious. Mantovani (1984, p. 1) declared that 'Melanesians were and are religious people'. Hogbin (1939) saw the religious system of North Malaita as the driving force behind the whole culture. Lawrence (1987) described the Garia of Papua New Guinea as sweeping all knowledge under the carpet of religion, so that they have no secular tradition of knowledge at all. It is pertinent, therefore, to examine whether religion still holds a dominant position in the world-view of present-day students.

MAGIC AND RELIGION

Both in interviews and in written responses to 'The curse' exercise, Christianity was the reason most frequently given by the students for personal rejection of magic and for a wider, general decline in belief in magic. There appear to be three ways in which Christianity counters magic. Some students declared that it prohibits the belief in and practice of magic. They suggested that magic is superstition and does not exist: 'Finally, as I am brought up in a Christian family, I am never taught to believe such spirits healing but only to believe in the power of God.'

A second group suggested that Christianity accepts the reality of magic but labels it as evil, the work of Satan. More common, however, was the position that placed less emphasis on evil but maintained that Christianity triumphs over magic through its greater power: 'I would not be afraid of the Vullai'i man or his customs because I can use my power (Christianity) as well to destroy the Vullai'i man custom and heal the children, but for his appearance I would be afraid.'

It is belief itself which gives power to magicians and, hence, truly held Christian beliefs give protection from magic. Faith is everything: 'What I mean is that, (my belief is) if you believe and are scared of what they are going to do, then for sure it will happen, but if you don't believe then nothing will happen.'

Of course, it is sometimes wise to keep one's options open: 'I would not be afraid of the Vullai'i man. Firstly because I would not believe in such things. Secondly, although these things existed, I have a God who protects me.'

As far as the majority of students are concerned, the link which existed in traditional Melanesian religions between religion and magic is still there. Powers that are referred to as magical are spiritual powers and as such come into the domain of religion. The term 'magic' is now taken to mean the use of traditional spiritual powers and the adoption of a new religion makes such practices *tabu*. Belief in the essence of magic—the influence of spiritual powers on the physical world—remains, and may even be stronger as the new religion claims greater powers in this domain, but it may no longer be referred to as 'magic'. Writing about an earlier generation of Solomon Island Christian converts, Hogbin pointed out that the same word, *aru*, was used for magic and for Christian prayers: 'The two forms of otherworldly power are conceived as working in the same manner and achieving identical results' (Hogbin, 1964, p. 91).

Lawrence (1987) too, has shown how the Christian missionaries among the Garia have unwittingly reinforced convictions of the reality of traditional deities rather than undermining them. One student gave an interesting account of how both traditional and modern beliefs may be relied on in the same situation:

To protect yourself with that type of magic, we sometimes use some of the custom medicine. It can only be cured if you have the faith fixed on that custom medicine. For example, at our home we usually have some old men and women who used to cure the attack of magic. They collect some leaves and part of the skin of a tree and gave them to the person who was attacked by magic and if the person have the faith of it will be cured. Then he will be cured

in two or three days after it had started. In addition, we usually prayed to God to drive out the magic or demons that attacked the person.

Only a small proportion of students referred explicitly to the spread of scientific knowledge or attitudes as a factor in the decline of magic. Of these, the majority referred specifically to the growth and success of medical knowledge, perhaps because that was one of the key concerns of 'The curse', or perhaps because that is one of the main areas in which a belief in magic is still widespread. Arising from the clear links between magic and the spiritual world we have the apparent contradiction that Christianity can offer a more potent attack on magic than can science, while at the same time providing unintended support for the validity of magic. This point is further emphasized by a look at the students' personal experiences of magic, and the areas of life to which these apply.

PERSONAL EXPERIENCES WITH MAGIC

Over 40% of the students who were questioned claimed to have witnessed an act of magic, and a further 30% had heard of such an act. Girls were much less likely than boys to have seen or heard of examples of magic. Girls too were more strident than boys in their denunciation of magic as either 'uncivilized' or 'un-Christian'.

The majority of personal experiences or hearsay of magic fit into four groups: love magic, curative magic, sorcery and 'conjuring'. The first of these was more often described by boys than girls and only one girl claimed to have seen it in action rather than just hearing about it. It always acts to attract a girl to a boy, never the other way round:

Yes, I saw one boy back home who had this magic of making girls attracted to him. He said some things which I haven't heard before and called the girl's name. The next day he went to see the girl which he knows but doesn't have a relationship. He put something in a chewing gum and gave it to the girl. The girl cried and came to his house that night.

Curative magic sometimes simply acts as a cure for the afflicted person, however its purpose is often to seek out and take revenge on the person assumed to be the cause of the illness, since illness which responds to magic is almost certainly caused by magic itself:

Yes, just last week when my father suffered of a strange sickness the doctors could not even tell, one of our villagers came to cure him and he was cured. Next what he did was to reflect the illness to whosoever the killer is by cooking a root on fire. Few days later we saw the man suffering from his own custom.

The complement of this is sorcery, intended to cause illness or even death:

Yes, I have known one example of someone using magic. He had cast a spell on a young lady. The spell is to curse the lady to have a very bad illness and can eventually die. In fact the young lady got a disease in which the doctors couldn't cure her. She even tried custom medicine but it's not worthwhile. Consequently she died after suffering for almost a year.

The primary uses of magic are for dealing with the crises of life: sickness, death and sexual conquest. This is as it always has been, but perhaps the range of crises demanding the use of magic has been reduced. Rituals recorded as prevalent until quite recently that related to agriculture, to fishing, to the weather, or generally to ensuring the successful outcome of any venture, are now virtually non-existent (Hogbin, 1939; 1964). Isolated instances of old men who could disperse mist, control fish or bring rain, were mentioned by the students, but these are clearly now rare. Have these practices really gone, or have they simply been transformed? Have science and an associated materialist rationality replaced the need for intervention by spiritual powers in these areas, or has there simply been a change in the name of these spiritual powers? Perhaps the original unity of magic, science and religion has been fractured; but what are their present domains and powers?

Magic, science and religion: the balance of belief

When asked directly if they felt there were any contradictions between their religion and the science they had been taught, the majority of students answered in the negative. This is perhaps not surprising, since contentious issues such as evolution were not part of the science course for most of them. Nevertheless, some of the more senior students were aware of issues from which conflict might arise. For many, this was simply a matter of an unresolved conflict, but those who took a position tended to reject evolution in favour of the biblical version of creation. Mary's comments, which introduced this article, may represent the views of many. Religion is the framework within which many students' belief systems operate. Science can be accommodated as long as there is no conflict—and generally there is none—but it does not achieve the same status as religious truth. Whiteman comes to the same conclusions about Melanesians in general: 'Melanesian epistemology is essentially religious. That is, Melanesians rely primarily on religious knowledge as their basis for knowing and understanding the world in which they live' (Whiteman, 1984, p. 87).

It would be unsafe to be quite so dogmatic as this when referring to the students in this study—a relatively highly educated minority in the Solomon Islands society—but the general tenor of this statement certainly applies.

In the same article, Whiteman (1984, p. 97) also emphasizes that 'Melanesian religion is pragmatic and concerned with material results'. This emphasis on practical outcomes might seem to favour science over both religion and magic as the dominant form of knowledge, but this is not always true. A group of students who firmly believed in the power of custom magic informed me that a magic spell will always work as long as it is performed correctly; if it were not so, they would not believe in it. The same group explained that the Christian God is more powerful than custom magic, but a complication arises here in that God has the option of responding either positively or negatively to a prayer. Ancestral spirits, they maintained, must respond in the desired way when appealed to, but the Christian God is not so obliged. This serves to emphasize the omnipotence of God: he cannot be

manipulated by human beings, but makes his decisions based on the morality of requests. Hence the failure of appeals for action through prayer is seen to reinforce the power attributed to God, not to weaken it. All that is needed are a few instances in which prayer is seen to achieve desired results in order to confirm the belief in its practical powers.

This is exactly the same state of affairs which will weaken the acceptance of science as a universal truth system. Scientific knowledge, justifiably or not, claims to be correct—at least, as it is presented in school. If this claim is true, science must always achieve the desired results. A single failure is enough to negate this claim since, unlike the actions of God, the actions of science do not have the options of distinguishing between the moral and the immoral. It was suggested earlier that the failures of scientifically based medicine to cure all ailments leaves an opening for the acceptance of alternative treatments and explanations. The widespread effectiveness of scientific medicine is accepted but it does not eliminate the belief in both traditional explanations and cures on the one hand and the power of prayer on the other. Somewhat paradoxically, it is in medicine that both the success and the fallibility of science are most clearly observed by the people of the Solomon Islands.

It might appear that science and magic should both suffer from this weakness of disproof by a single failure. Both may even respond to failure in the same way. If a magic spell fails it is either because the ritual was not followed correctly or because of interference from other magic. When a scientific experiment fails to give the expected result, either the procedure was at fault or there were extraneous influences. For the majority of people, as Lawrence (1987) has pointed out, the explanations given by the sorcerer are comprehensible and fit with their view of the workings of the world. When the scientist does give an explanation for failure, it is likely to be in terms that are difficult to understand.

Ultimately then, magic has the advantage over science in that its spiritual interpretation of the world is supported unwittingly by the teachings of Christianity. Christianity allows the believer to be 'modern' without abandoning some basic principles of the traditional world-view. Possibly, the more fundamentalist forms of Christianity serve this purpose even better. This may seem surprising, given that the fundamentalists are often the most vociferous in their condemnation of traditional practices. As Horton (1982) suggests, however, fundamentalists place an emphasis on the explanatory, predictive role of religion, which was a major function of traditional forms but which has been at least partially abandoned to science by many major Christian churches. In this way, the unity of world-view that the traditional forms possessed remains in the new forms and is derived from essentially the same interpretations of the nature of reality (Horton, 1982, p. 213):

Hence the conflict between the traditional religions and the so-called 'world religions' is not so much a conflict between radically different world-views as a conflict over what to worship and what to eschew within a single pantheon.

Science, on the other hand, attempts to undermine magic by rejecting the very base, the very world-view, on which it is built. Although, as Gellner (1975, p. 124–27) has pointed out, science rarely attempts a frontal attack on magic in practice, preferring to treat it with contempt, as ‘unworthy of rational opposition’. To cite science as one’s grounds for the rejection of magic entails the rejection of much more than does an endorsement of the Christian assault. The mechanical, materialist world-view of science demands a major break with tradition; for despite the continuity in function between magic and science, there is a major discontinuity in form, in idiom, between the two (Horton, 1967). Christianity forbids the eating of the fruit of the tree of magic, and may try to lop off major branches, but the roots are left intact. Science demands that the whole tree be uprooted.

The overall result of European intervention has been the introduction of Malinowski’s trinity to replace the unity of tradition. But the relationship between the three components is not symmetrical. That between magic and religion is now both antagonistic and mutually supportive. They lie within the same ontological boundary, but science remains isolated, outside this boundary. The idiom of science prevents its integration; the power of science means it cannot be ignored.

Science suffers from a further weakness in its acceptance of its own incompleteness. It does not claim to give the answer to everything, whereas magic is a complete world-view (Sharot, 1989, p. 277):

Magical or witchcraft explanations will answer questions that science leaves unanswered. Thus, the development of science and technology will not alone result in the disappearance of magic. Magic will disappear only if persons accept the scientific world-view, including its incompleteness, but this involves a conversion that cannot be assured by the empirical disconfirmation of magic or the advance of science.

Thomas (1971) makes a similar point in accounting for the decline of magic in England. He considers the claims of social, technological and intellectual forces in bringing about this decline and points out that the widespread rejection of magic preceded many crucial scientific and technological developments - notably in medicine. He concludes that an intellectual change is the key to the demise of magic. Thomas’s extended parallel between England of three or four centuries ago and present-day developing societies makes several very pertinent points of comparison, but on this crucial matter of the chronology of these various counter-magical influences, the comparison breaks down. New religions and new technologies arrived simultaneously in Solomon Islands. Undoubtedly this new technology did much to reduce the practice of magic. It seems likely, however, that the opportunities for the intellectual changes that both Sharot and Thomas see as important for the rejection of magic only became available with the somewhat later introduction of Western humanistic education, and perhaps even then only for those who followed this education beyond the minimum levels. If a ‘critical mass’ of intellectual change is necessary to precipitate a widespread desertion of magic, this may—if at all—take place way in the future, and it may be unwittingly hindered by the amalgam of Christianity and traditional religious beliefs that has developed.

School science and world-views

DEALING WITH CONTRADICTION

In the meantime, magic will be resorted to in those crises of life which science does not address. Science and technology are accepted as valid in their appropriate spheres, without the need to adopt a scientific world-view. Students may continue to perform well in science examinations when that is what they are faced with, but, in the Melanesian pragmatic tradition, will turn to other sources of understanding when they feel the situation demands it. Exposure to school science does not appear to bring about a radical change in the students' world-view. They do not leave school with their understanding of the fundamental nature of reality substantially altered. They do not accept all of the conceptualizations and explanations of science as replacements for those available from other sources. But then, it would probably be very surprising if they did! Science cannot offer solutions to many important questions, and it would be wrong of us to pretend that it can. There are important issues in these students' lives in which science can offer them neither hope nor comfort. At such times, they turn to traditional sources of insight, or to Christian beliefs which have, in many ways, succeeded in making contact with those traditions far better than science could hope to do. Science may be co-opted into their pragmatic world-view when needed for practical purposes, yet it still remains essentially outside it because of its non-religious nature.

What does appear to happen is that the students are selective in what they accept from science and when they apply it. Scientific knowledge and scientific analyses of phenomena have their domains, but there are others in which science does not apply. In some cases, these domains are identifiable as particular physical phenomena. Thus, electricity is in the domain of science, there being no account of it available in tradition or in Christianity. Illness is subdivided between domains, with the largest part now claimed by scientific medicine, but with certain afflictions responding only to custom magic or to prayer. For several students, questions of the origins of the universe, and of human beings in particular, are the domain of religion, not science.

But this process of 'domainization' is more complex than a division of the physical world. The domains of applicability of different sources of knowledge are related to the social and physical environment and to purposes. Earlier in this article I quoted a student talking about the protection that ancestral spirits can offer. It is interesting to note that, although she lived in Honiara, this student referred to these spirits being back in her 'home', in the rural areas of Malaita. This was quite commonly noted: that the rural areas, where *kastom* still rules, were the places in which spirits were declared to be most active.

For a large proportion of the students in this study, science education takes place in an environment far removed from that which supports the knowledge system of the majority to which they belong. Despite minor incursions of Western technology, the rural areas of Solomon Islands remain largely traditional, with

Christianity inherent in their social organization. This social organization is both rooted in and supportive of traditional forms of knowledge and practice. Several students talked of the changes in behaviour they were obliged to make when they returned to their home villages. A few who had been born and brought up in Honiara found these changes difficult, but for the majority, the change was automatic. They slipped between the two sets of expectations quite naturally. Do they also slip comfortably between world-views? Just as they have two repertoires of behaviour easily available, do they have two sets of understandings about the nature of the world between which they can change when social circumstances demand? I believe they do. The coherence of the society in which they live depends on the maintenance of respect for key elements in the belief system, and students must at least pay lip-service to these. In practice it must be more than lip-service if intolerable psychological strain is to be avoided. To compartmentalize the world into domains, each with its appropriate interpretative framework, is not a perversity but an effective survival technique.

IMPLICATIONS FOR PRACTICE

Important questions about science education in Solomon Islands are raised by the observations recounted here. It would be inappropriate and arrogant for me, as an outsider, to suggest answers to these questions, but perhaps I can highlight some of the issues. I can certainly offer an opinion. Decisions, however, must be made by those whom they will most affect.

The central question is whether it should be an aim for science teaching in the Solomon islands to effect a change in the students' world-view. My first response to this is that it is difficult to teach science effectively and honestly in such a way that it does not present a new world-view as an option. Science is not simply a collection of 'facts' and transient theories. It is a way of gaining knowledge of the world and interpreting that knowledge. It is a way of seeing the world: a world-view. To teach it as anything less is to present an impoverished science.

The Solomon Island students that I talked to about science were quite aware of its power. They were keen that, both as individuals and as a nation, they should share in that power. They know that the outside world, which is thrusting itself into their country and with which they must deal, has access to this power. For Solomon Islanders to be denied access would be to put them at a severe disadvantage. And, once again, this power derives not just from the possession of knowledge, but from an awareness of possibilities for understanding the world and, through understanding, to transform it.

But the fear commonly expressed is that the promotion of this vision must threaten an identity which derives from alternative, traditional sources. This present study suggests, however, that, in the Solomon Islands context, there may be little basis for this fear. It suggests that to portray the options in terms of 'either science or tradition' is a gross simplification of what occurs. It suggests that students of science are in fact able to retain much of their traditional world-view while still

appreciating the new view that science offers. They see science as opening up new horizons without losing sight of the old ones, and develop strategies to deal with apparently incompatible visions. The traditional world-view may not emerge intact from this encounter with science. It may be modified or its scope may be circumscribed. But that which we now label 'traditional' has never been static and there is a danger that in fighting to 'protect' such tradition we shall simply ossify it. Education is about producing change. We must try to remain aware of the direction and consequences of the change it engenders, but an education which leaves the individual and society unchanged is no education at all. We should rather be positive and see the exposure of these young people to different world-views as a potentially enriching process. (Is there not something rather patronising about Western academics who seek to understand the world-views of others but fear that exposure to a Western world-view will be dangerous for 'less developed' peoples?) We must have more confidence in our students. We must respect both their right to alternative visions and their ability to handle them.

Two final quotations from my students can serve to illustrate the point I wish to make. Before giving them I should point out that neither of the two students to be quoted became cultural outcasts, nor were they unable to function within their home and society, despite the influence that science has obviously had on them. Undoubtedly, science has had an impact on the way they see the world. Undoubtedly, they have a world-view that differs from that of their parents and grandparents. But so do I, and almost certainly, so do you.

The first quotation is from a student explaining to me what it is about school science that attracts him. I think the sense of excitement that he gains from science is obvious:

Especially when I am small I just thought, 'Oh, these things are coming from this and this'. [. . .] Especially those things, say, for example, the rainbow. I may have thought about it as the Bible said, 'God created this and that'. And when I came to Form One, we learn about the [. . .] evaporation and how water rises and caused by the wind blowing, caused the rain. Therefore, I know and understand.

The second quotation comes from a boy who had just answered a question using Archimedes' Principle to explain why it is dangerous for a fully-laden ship to sail from salt water into fresh water. He has gained new understanding of a meaningful part of his world, and he feels empowered by it. But he certainly has not undergone some sort of conversion, nor has he lost his identity. He has merely developed.

That reminds me of an incident in South Malaita. They loaded their canoe with copra to take to a ship in a big river nearby. When their canoe sank they said that it is the people who were jealous (because of the money they were about to get) made the devil sink their canoe. Now I can understand the real reason why it happened.

Note

1. Reluctantly, I have corrected the spelling and made other minor alterations when reproducing the students' own written responses. This has been done to make their translation into other languages for publication easier, but care has been taken to retain the meaning of the students' writing.

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CHANGING MANIFESTATIONS OF WISDOM AND KNOWLEDGE IN THAILAND

*Zane Ma Rhe a*¹

Introduction

Thailand is experiencing a period of rapid economic transformation, and the disturbances to the society caused by these processes are opening up new possibilities across all aspects of human activity. At the same time, these processes are precipitating transitions in traditional ways of thinking, and there is a sense of uncertainty and also of urgency about how important aspects of Thai culture can be protected from the onslaught of outside values and ideas. In my research, I spent six months in Thailand discussing the concepts of wisdom and knowledge in Thai society, and their relevance to higher education. This was part of a broader research project that examines the internationalization of knowledge and the higher education relationship between Australia and Thailand. I have interviewed politicians, bureaucrats, university administrators, teachers, monks, nuns and students in Australia and Thailand. A strong emergent theme of this research is that culture is increasingly being overshadowed by economic imperatives, and that restoring the balance between commerce and culture requires the development of new ways of thinking that are deeply rooted in local culture while still able to operate within a global marketplace. These new ways of thinking can be developed and taught in universities.

Thai society is no stranger to the influx of knowledge from many parts of the world. For many centuries Thailand has sent its young people out of the country to acquire new ideas and technologies. It significant that Thailand, unlike many other

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countries in the region, managed to avoid being colonized in the last century and some thinkers ascribe this to a carefully managed strategy promoted by Thai royalty. This strategy involved Thailand becoming friends with the world powers, bringing new ideas back into Thai culture, and adapting those ideas that were helpful to the development of modern Thailand. They believe that the colonization that was avoided in the last century has merely been delayed, and that Thailand is now under serious threat of disappearing as a unique cultural entity. This, they claim, is because Thai society is unable to assimilate and adapt to the sheer volume of incoming information, attitudes, values and technologies quickly enough to preserve Thai ways of thinking.

This paper focuses on four thinking systems that are present in Thai society in 2538^{3/4} (Buddhist era.)/ A.D. 1995 (Christian era). Before discussing these ways of thinking I will consider some broader influences that are relevant. The geographical position of Thailand, Thai history, the Buddhist/Hindu/Animist/Moslem/Christian/Confucian mix of religious and philosophical heritages, and the evolution of diversity in Thai culture, are all significant shapers of the present ways of thinking.

Thai geography and history: contributions to ways of thinking

The Kingdom of Thailand is centrally located in what is known as south-east Asia, with the Malay peninsula to the south, Myanmar to the west and north, Cambodia and Laos to the east and Laos in the north-east. Up until the last 100 years, these tracts of land were loosely controlled by various monarchies who settled disputes by rearranging their borders after defeat or victory in war. It is only in this last century that borders have been firmly established.

According to historians such as Thompson (1967) and Syamananda (1993), the Kingdom of Thailand, the Siam of historical discussions, has had relations with many other nation states, notably China, possibly from A.D. 607. During the century of 2300 B.E./ A.D. 1800, Chinese influence waned, giving way to various European influences. Like the earlier Chinese attempts, Europeans, and later Americans, failed in their bids to assimilate Thailand into their territories. Nevertheless, by imposing unfavourable treaties upon the kingdom, many European countries did diminish Thai sovereignty. Treaties such as the Bowring Treaty forced concessions in commerce and jurisdiction.

After the Second World War these treaties were renegotiated, however Thailand had learned the lesson that outsiders will always be eager to secure advantage over the Thais, and that the Thai strategy should be to always protect their own interests. This is an important point to remember when we begin talking about ways of thinking in a transitional Thailand.

Throughout recorded history, the Thais have lived at the crossroads of ideas and commerce between the peoples of China, India, Sri Lanka, the Malay states, Indonesia, the Philippines, the Khmers, and many smaller indigenous groups of

people. All these peoples have both gained something and left something on their journeys. Historically, the Thais have welcomed all who come with a respect for Thai culture and have actively sought new ways of thinking from these peoples, and continue to encourage contributions from Europe, Japan and America. This is a strong common thread in the history of Thailand.

A rich spiritual heritage: its contribution to ways of thinking

Thailand is officially a Buddhist country, and over 95% of its people consider themselves Buddhist. For many Thais, being Buddhist is indistinguishable from being Thai. The spiritual philosophies are so intertwined with Thai culture that they cannot easily be separated. Ways of thinking in Thailand are directly influenced by Buddhism. A small proportion of Thais, though brought up with Buddhist social practices, follow the Moslem religion, and an even smaller percentage are either Christian or followers of other indigenous religious practices.

Like many other aspects of Thailand, the Thai capacity for adaptation has brought diverse religious and spiritual practices into the everyday lives of all Thai people. According to Vongvipanond (1992) and Mulder (1990), there are layers of belief that have evolved over centuries. The notable aspect of these practices is that they have been incorporated into rich ways of thinking that are distinctly Thai.

Respect for the spirits provides a strong base for the spiritual practices of many Thais, whether educated or uneducated. The spirits are to be looked after, and when necessary, pacified. Hindu beliefs and practices were adopted by the Siamese courts, and established a set of more powerful deities than the local spirits that also called for ritual appeasements and attention. Buddhism brought the Four Noble Truths and the idea of a way of release from this realm of suffering. Moslem Thais weave their own adaptations as do Christians, even in contemporary society. Added to this are the philosophical beliefs of Confucianism that have found their way into Thai society through the Chinese Thai communities. Historically, different status groups have been attracted to different combinations of ritual practices but they are all acceptable within Thai expressions of spirituality. The King in Thailand is the defender and upholder of all spiritual practices.

Clearly, a complex basis of thought arises from such a rich spiritual and philosophic heritage. It can be argued that the Thais are well placed to assess and transform the influx of outside influences in ways that are still Thai. A Thai friend described Thai culture and spiritual practices as akin to a vegetable casserole. It changes each time it is made; it can be either simple or elaborate, and can be transformed completely, even though the same basic ingredients are there.

From this discussion, we can see that two strong attributes are present. There is an openness to outside ideas and a diversity of inputs. These are often consciously brought into the culture. The Thai style is to filter everything that is learned, borrowed, bought or copied through a rich and proud cultural tradition.

In this process, the original often becomes unrecognizable, even to Thai people, who experience it as a Thai rather than as an outsider's practice.

Traditional Thai culture and its contribution to ways of thinking

Traditional Thai culture is a complex and unique way of organizing people to live together harmoniously. Religious practices and beliefs form a strong basis on which the culture stands. Arising from this base are a number of traditional Thai cultural attributes that reflect Thai ways of thinking.

The avoidance of conflict is significant. This does not mean that there is no confrontation but that indirect techniques are employed when conflicts arise. This attribute is crucial in rural village life in order to maintain harmony as harvesting and building houses are community activities. The avoidance of conflict as a way of maintaining harmony has been carried over into the urban situation, and is still an important way of thinking. By reflecting upon the importance of non-conflict in Thai culture, one can gain insights to how Thais relate to outsiders.

Emotional distance is also valued. This arises from the Buddhist context that teaches that strong emotional attachments lead to suffering. *Sanùg* (to have fun, enjoy oneself, have a good time) is an important cultural attribute, and is predicated on superficial fun and companionship without emphasis on a strong attachment. This is a concept that originally evolved from rural living, and has been transposed to the urban situation, now relating to work and to play, and indicates that one should gain enjoyment from whatever one does in a day.

Respect and love of the King, and *thûi tâm thûi suang* (hierarchical relationships) weave through traditional Thai culture. Vongvipanond (1992) writes that everything in the Thai's perception is situated in a hierarchical system. Everyone is situated on a different rung and everyone knows through the processes of socialization how to act towards all others based on one's place; these relationships are fixed. According to Klausner (1994) every moment of every day one's interactions reflect an understanding of these relationships. Proper behaviour requires an understanding of these relationships.

Traditional Thai culture, which is rooted in rural living, is experiencing radical changes as a result of a rapid economic development that has drawn many people to the cities. The opening up of Thailand to broader economic influences has led to other pressures on the fabric of Thai society and for many young Thais the traditional culture is no longer a part of social reality.

Nevertheless, while traditional ways may not be the norm, there is as much continuity as there is change. It is important to understand these aspects of traditional Thai culture when we come to look at the ways that the Thai people are adapting and changing in response to outside pressures. In this time of transition, Thai people are creating new ways of life that are neither traditional, nor mere copies of Western models. These ways of living and thinking are distinctly Thai.

Contemporary ways of thinking in Thailand

At present in Thai society, there is a move towards a revolution in ways of thinking. 'Ways of thinking' is a theoretical construct used to describe both processes and outcomes of thinking. The storehouses of knowledge are the underpinnings of any society, and their survival and development depends on knowledge being handed down and improved upon in ongoing cycles, thus giving each culture its distinct heritage. Individuals are the recipients of knowledge that is preserved in larger cultural organizations. These organizations preserve and pass on the thinking processes of that society.

The acquisition of both knowledge and wisdom are desirable in contemporary Thai society; this commands respect and increases social status. Knowledge and wisdom are also deeply embedded in traditional Thai social practices. This research has therefore chosen to focus on notions of *khwaamrúu* (knowledge) and *panjaa* (wisdom), and to look at the transition in ways of thinking within this context. Both *panjaa* and *khwaamrúu* are broad terms with derivative meanings that will be discussed. Both terms encompass many ways of thinking; however, only those that are relevant to this paper will be detailed. It is the claim of this paper that if a society does not have a broad range of ways of thinking at its disposal, deeply embedded within its own cultural practices, then that culture's ability to survive as a distinct cultural entity in the global world will be curtailed. As can be seen from the earlier discussions, Thailand certainly has long experience in the processes of adaptation. An examination of Thai ways of thinking will show that the transition to economic well-being directly influences the storehouses of knowledge.

What then are the manifestations of Thai ways of thinking? These are most often found in discussions about Thai knowledge that have been examined by outsiders. Mulder (1990) suggests that in modern Thailand, the approach to knowledge is traditional and static. He states,

Wisdom and knowledge are of course highly respected, as exemplified in the status of teachers and elders, but the cultural conception of wisdom and knowledge is static. To study is simply to amass the knowledge of one's teachers and not to develop one's own. Whether it is university or ecclesiastical studies, what society is interested in is a level of conventional knowledge, and not the genesis of spiritual or intellectual curiosity [. . .] To achieve in the area of new ideas is, in spite of the pressures of modernity, still negatively valued in Thai culture, which prefers to follow old recipes and traditional wisdom [. . .]. The main impulse in Thai education is to accumulate conventional knowledge, and not so much to gain wisdom (Mulder, 1990, p. 100–16).

While there were certainly proponents of this view of Thai ways of thinking, I was encouraged by my Thai friends to look deeper into modern Thailand and find those aspects that still arise from older times, yet are at the same time distinctly new. I spent hours in discussions about Thai ways of thinking with many Thai friends and I offer these ideas to you to stimulate reflection and discussion.

KHWAA MRÚU (KNOWLEDGE)

Thai informants described this as a body of information that changes over time, is dynamic, but tentative and inconclusive. It is not experience-based, and its attainment does not require understanding. In part, this knowledge comprises facts and opinions that one gains from one's family, or one's work and social environments. This sort of knowledge is usually learned most successfully on the strength of need. It is a necessary fuel, an input into a thinking process. The input of *khwaamrúu* (knowledge) in Thai culture, is generated both from within and without Thailand.

The knowledge derived from within Thailand has three sources. The first is the knowledge that is traditional and predominantly rural in origin, and developed before contact with European and American influences. This knowledge has been passed down from the elders to the younger and is called *phuumpanjaachaawbâan* (technological knowledge of the rural peoples) and *samunphraj* (knowledge of traditional plants and herbs). These form the storehouse of biological and technological knowledge of the peoples of Siam.

The second form of knowledge is derived from contemporary influences and is known as *panjaathaanglôog*, or knowledge of life. A third source is a higher form of knowledge and is called *panjaathaangtham* (right wisdom, from the Buddhist teachings about Dhamma).

Thai socialization strategies are geared towards giving young members of the society the knowledge they need to promote certain ways of thinking. These three knowledge stores are either formally taught by older family or community members, or informally acquired by the young through observation. These processes of formal and informal knowledge acquisition continue throughout a person's life; the knowledge changes over time and is context-based. These stores of knowledge are available to all in the community. They are taken up and practised and in some cases improved.

The actual experience of applying knowledge transforms the knowledge into an understood experience. This understood experience is wisdom. For the individual, it is the doing and reflecting that transforms the knowledge into wisdom, and the outcomes of the application can be shown amongst a group and improved upon by group effort. When groups of individuals have applied the knowledge and understood it, this becomes the *panjaa* (wisdom) of that social group, their local wisdom, their *phuumpanjaachaawbâan*. Local wisdom concerns itself with local needs and is a broad-based contextual wisdom that encompasses spiritual practices, socialization and education of the young, and the practices of commerce. A Thai person described this type of wisdom as:

Local wisdom = Knowledge + Experience + Ancestors + Society

Local wisdom is changeable over time, but in the short term is considered stable and is recognized and valued by the society. It is inextricably linked to everyday life; it is applied and practical, can be extremely complex and its presence influ-

ences the ways of thinking of the whole social group. It is the store of a society's older knowledge and it can be drawn upon to apply to new and unfamiliar situations. It can also be lost and forgotten.

In Thailand, apart from the traditional, practical stores of knowledge that one can draw from, a person can acquire knowledge from religious institutions and from contemporary society. Religious knowledge transfer concerns itself predominantly with 'higher' forms of knowledge that the individual can transform into an understood experience through application of the knowledge. The attainment of this goal is the gaining of *panjaa* (wisdom). Thai society draws its meaning for this type of wisdom from Buddhism.

Buddhism is part of a threefold teaching of *sinsamaatīpanjaa* (morality, concentration and wisdom). Many Thais will seek the knowledge which will enable them to live a good life, and will therefore practice the moral precepts *siin*. Some who have the interest and capacities will seek to learn how to concentrate and attain a still mind. These people will attempt the *samaathī* meditation practices. Fewer still will seek the teachings of insight, *vipassana*, that lead one to gain *panjaa* (wisdom). For most Thais in contemporary and traditional societies, the attainment of *panjaa* has not been actively pursued. The way to *panjaa* is seen as difficult and requires capacities gained in past lives; only a few are believed to possess the capacities to reach it.

Local and religious knowledge is a vast storehouse of information, ideas, values and opinions. This storehouse has been carefully tended and added to for centuries. Now the usefulness of this knowledge to modern Thailand is being examined as new priorities take precedence. New ways of thinking are called for that require new bodies of knowledge. In some respects this new knowledge is the in the realm of education and commerce. These are the new knowledge sources of contemporary society.

Secular educational knowledge

In Thailand this is acquired by attending school or university. Compulsory primary education is a requirement of Thai society. As shown by Wyatt (1994, p. 223–48), this is a relatively new form of knowledge acquisition in Thai history. Traditionally in Thailand, formal studies were conducted in the *wād* (temple) by monks who were also senior, revered members of the local community. Only boys were allowed to attend the *wād* for formal studies. Thus, local knowledge and higher knowledge were woven together for young boys and taught according to capacity and interest on the part of the monk and the student.

In time, *wād* expanded to teach a more secular curriculum, and also to teach girls. Schooling at the primary level still draws from traditional Thai culture for its principles of operation, and many traditional Thai cultural aspects are present in the curriculum. Without the contribution made to education by the *wād*, compulsory primary education would have been difficult to achieve in Thailand.

Secular schools and universities were established to teach new knowledge that was derived from European education systems. This knowledge was seen to

complement Thai ways of thinking and was used to establish such organizational structures as the Thai bureaucracy. This bureaucracy was seen as necessary for the development of the modern Thai state under a constitutional monarchy. Earlier Kings had successfully convinced the colonial powers that Thailand was a civilized country by taking on and adapting many European customs as an adjunct to their own cultural practices. Ninnanhiminda (1970; p. 63) reports on the comment of a former Minister of Education of Thailand:

the chief motive for the establishment of the first university in Thailand was mainly to train civil servants to serve the numerous branches of the government of the country which was emerging from a feudal past into the new era as a modern state and concurrently fighting extremely hard to survive and to keep intact her age-long independence. [. . .] The university established at that time was meant to meet the manpower needs as required in the attempt to run the country, fully determined to maintain its own sovereignty [. . .] and the independence of its people who had never been under alien tutelage before.

The kings saw the danger in a small country such as Thailand trying to actively oppose any dominant force, and they adopted a policy of adaptation and appeasement in all their dealings with outsiders.

The gaining of *khwaamrúu* (knowledge) was seen principally as a source of information for the Thai about what other countries were doing. But by far the single most significant departure from the old way was the establishment of international student exchange programmes to train young Thais in new ways of thinking.

For those who had the capacity and the financial ability to pay, knowledge was learned and brought back to Thailand from many countries. Overseas, Thais were taught ways of thinking that were unfamiliar to the experiences of most Thais. In earlier times, it was the children of the elites that were sent out, those who would return and take up leadership roles in the new Thailand. This was a significant channel for new ways of thinking to be introduced into the country and the ideas were filtered through established social practices before they were incorporated into the society. Thus the claim that Thais primarily value knowledge for knowledge's sake does not adequately recognize the usefulness of acquiring knowledge for the broader reasons of cultural survival and ability to adapt and change.

Although there are many avenues by which information can enter the country, the contribution of overseas scholars is significant, represented as it is by a large financial commitment on the part of the Thai government. Certainly one of the major attractions of this type of education in Thailand is that it brings new ideas and technologies into Thailand from abroad. Thai people still generally consider knowledge acquired at an overseas institution of higher education to be more useful to Thai economic development than that of local higher education, particularly at the post-graduate level. Thailand is not yet considered to be a generator of knowledge in the international education market.

It is interesting to note that the operating wisdom of international education markets avoids focusing upon the acquisition of wisdom itself. Higher education in

developed countries, rather, appears to concentrate on generating new knowledge that will enable societies to compete in the global economic marketplace. International education vendors from the United States of America, the United Kingdom and Australia sell the sort of education that will assist such countries as Thailand to learn the new knowledge that is necessary for them to compete.

Educational wisdom in higher education in Thailand is currently greatly influenced by global marketplace ways of thinking. This thinking has overshadowed local wisdom and religious wisdom; however this problem has been identified. One of the major goals of the National Education Plan for Thailand is the inclusion of local knowledge into higher education where appropriate. This is achieved for most of the universities by providing academic services to the community, and working with local people to preserve such *phuumpanjaachaawbâan* (technological knowledge of the rural peoples) as weaving, craftwork, metalwork, farming and hunting techniques. Attempts are also being made through the non-formal education ministry. It has proved far more difficult to incorporate traditional Thai ways of thinking into the mainstream university curriculum. The difficulty of balancing local knowledge with outsider curricula led one Thai friend to suggest to me that 'once you have had a university education you can no longer hear the wisdom of your ancestors'.

Over time, outside knowledge, as an input into the thinking processes, becomes assimilated Thai knowledge. This is then incorporated into the knowledge output, particularly in the higher education system. This new knowledge is diffused into society, and is then judged as to whether or not it is useful. If it survives the tests of time and experience, it becomes an insider Thai way of thinking, and can evolve into personal and social wisdom.

Marketplace knowledge

Another significant source of new knowledge is that of the marketplace, of commerce. There have always been opportunities in Thailand for trade with outsiders, and this interaction has provided a rich source of new knowledge of the world. Thus, marketplace knowledge can be seen as a bridge between older and newer knowledge. The knowledge context of the marketplace is that it changes over time depending on the society and its relationship to commerce. How to act in the marketplace is one aspect of local knowledge and wisdom when it is local, but there is also a commercial operating wisdom within the global context.

This newer global wisdom governs the selling of knowledge and education to developing countries. The countries that sell university education devise marketing strategies that are carefully thought out and follow the marketing maxim that 'it pays to be commercially wise'. The strategies are derived so as to maximize profit and minimize loss and the evolving ethics tend to protect the investor, often at the expense of local needs. This wisdom is balanced between sustainable economic continuity and profit, and is spreading rapidly around the globe.

Thailand enters this global marketplace as an economically developing country, and as such is not considered one of the big players in the international arena.

There is a lot of pressure for Thailand to adopt the marketplace wisdom of the big players but there is growing evidence that Thailand, like many other economically developing countries, has a large store of older marketplace wisdom that it can draw upon, wisdom that arises locally, tested by time, and is deeply rooted in the local culture.

One significant aspect of this is the bargaining culture. The big players tend to be bound by legalistic transactions that resort to an external authority, the international law, when things do not go the way that they want them to go. Thailand, like other economically developing and developed countries in the Asian region, impacts upon global commerce with a different marketplace wisdom, drawn from Confucianism and the bargaining culture. Thus it can be seen that local Thai wisdom can be drawn upon to act as a bridge between the new and the old. The context of marketplace wisdom is at present highly contested.

PANJAA (WISDOM)

In all its forms, wisdom is the outcome of certain processes of thinking. I will be considering a particular context of wisdom here, the social wisdom context. The manifestation of wisdom is recognized as being impermanent and subject to change. Unless the gaining of knowledge is accompanied by a process of thinking, there is no understanding; without understanding there is no possibility of gaining wisdom.

Personal wisdom arises in a social context and is related to values and interpretations of the world. This is *panjaakhângnaj*, inside and inward. *Panjaakhângna* is related to capacities both innate and learned. It is personal and an outcome of the development of certain thinking processes, coupled with knowledge, capacity and experience. For more traditional Thais, *panjaa* is derived from age and experience. Such personal wisdom can be passed on to the younger generations. People explained that this wisdom arises because the older people have more knowledge and experience than the younger members of the society, and that this body of knowledge assists them to survive and develop new knowledge. Others said that this type of wisdom is breaking down because older people often do not understand what is going on in modern society, and their values and attitudes no longer help younger people to survive. In fact, some of the old wisdom is moving in the opposite direction to that of the newer society. It is also true that experiences that are the basis of personal wisdom can be devalued in the modern society by qualifications such as degrees and diplomas. Thus, people with years of experience will no longer necessarily be recognized as having personal wisdom because they have no piece of paper to validate their claim.

Another significant aspect of personal wisdom is that one must be born with the capacity to develop the processes of thinking that can lead to the cultivation of wisdom. For the Thais this is called *satipanjaa*. For Moslem and Christian Thais, this innate capacity is considered a gift of Allah and God. For Buddhist Thais, this is a capacity for attaining wisdom gained by having made *bun* (merit) in past lives.

Overall, personal wisdom is latent and must be stimulated by some outside force. Some argue that the innate capacity for wisdom is inhibited by formal education processes. Others argue that modern formal education provides a way of stimulating latent capacities for developing wisdom. Along with age, experience and innate capacity, many believe that personal wisdom operates within an emotional context. This sensitivity enables a person to think broadly and deeply about issues with both the brain and the heart. For Thai people, there is no division between the brain and the heart. Processes of thinking that train the mind train both the heart and the brain together. Personal wisdom cannot develop if only the brain is trained.

In Thailand, personal wisdom is mainly recognized in the social context of wisdom. It is from the social context that personal wisdom can grow and be recognized. It is within aspects of social wisdom that structures exist that preserve and improve the processes of thinking and pass them on. The Thai social context of wisdom can be described thus:

Social wisdom = Knowledge + Time + Testing + Acceptance by society

As such, wisdom is changeable over time depending on the social context of what is valued and what is not. It arises according to circumstances of need and can be morphogenetic. That is to say, it can be thought of simultaneously in many places at the same time without reference to the others. It is always improving and is cumulative. It is derived from the capacity, learned and inherited, for a society to articulate its needs and search its old and new stores of knowledge for acceptable solutions to problems. It arises out of the potential capacities of that society and its recognition is often linked to social structures.

Processes of affirmation of local wisdom

Thailand has always had processes for filtering new knowledge that comes into Thai society, however the newer inputs of knowledge purchased or given by overseas countries to the Thai universities and government agencies have tended to eclipse the importance of local knowledge, the *samunphraj* (old knowledge; knowledge of traditional plants and herbs) and *phuumpanjaachaawbâan* (technological knowledge of the rural peoples).

The ways of thinking that derive from the old knowledge, and their processes of analysis and transmission, have been weakened in a specific way. When Thailand was relatively isolated from outside influences, all new knowledge was filtered through a strong local knowledge base. The processes of analysis were performed against a rich storehouse of insider wisdom, and adaptation was a significant factor. This could be described as the first stage in a process of transition. During the early era of outside influence it appears that Thailand lost its confidence in its own filtering processes. This is the second stage where confidence in local solutions was eclipsed by the newer outsider knowledge derived from

Western education and global economics. Thailand now seems to be entering a third stage where local wisdom is reasserting itself and the new and the old are being moulded into a third distinctive process of transmission and analysis of knowledge. These ways of thinking absorb the new but draw on the old.

Recently, Thai thinkers such as Bhikku Buddhadasa (1986) and Sivaraksa (1994) have shown concern that the focus on economic development has overshadowed the deeper needs of the Thai people. Old ways of thinking that gave rise to *samunphraj* and *phuumpanjaachaawbân*, (the older technologies and biological knowledge) are being forgotten as older people die and the rural people leave the villages to work in the new industries. The new form that is arising asserts that knowledge must be coupled with moral principles, *khwaamrûukhâunatham*, for the knowledge to be of benefit to future Thai society.

Ways of thinking in Thai higher education

In the past, Thailand generated its own knowledge through many local structures. The religious institutions preserved knowledge and ways of thinking that were drawn upon by the society to decide moral and ethical principles. The traditional family and community structures socialized Thai peoples into the broader society of Thailand. Marketplace knowledge was learned by buying and selling things. Entering the 'global village' has meant that Thailand has lost its autonomy in the generation of organic knowledge. Now knowledge is transplanted and reproduced. It is a commodity to be sold by economically advanced countries and bought by the developing countries.

This has important implications for higher education in Thailand. Knowledge has become more and more internationalized and less local in origin. In this way, Thai higher education institutions are reflecting broader trends in Thai society. Ways of thinking are in transition in the universities. The many university staff trained overseas have brought back newer knowledge, that of global economics, and development modernization processes.

At the universities, knowledge is generally confined to the transfer of information in a formal way from *aacaan* (a teacher with a degree) to *nâgsygsaa* (university student). Knowledge is transferred in a structured way via curricula. The information is believed to have universal applicability, and to be true because it derives from scientific theory. In reality, many curricula that are directly transferred to Thailand from European and American contexts have been developed based on local situations in those countries.

By the time the new knowledge is brought to Thailand it is predominantly theoretical in its presentation. This means that the knowledge is taught in a pre-existing framework that often does not reflect the Thai social reality or Thai ways of thinking. The university system is under pressure because the demands of economic development have eclipsed the university's more cautious role as important filter that adapts outside knowledge. Local stores of knowledge and wisdom are being pushed aside, and are seen as impediments to economic development, while

newer knowledge of Western education and global commerce is rapidly being added to customary ways of thinking in the universities.

Despite the pressures, there is a new feeling in the air in Thai higher education. At a policy level, there are major attempts to bring older Thai local and religious knowledge back into the universities. At the university level, this is being done by internationalizing the curriculum while focusing very strongly on the needs of the local communities. This is particularly so at regional universities in Thailand. This has meant the development of academic services for the local communities, and the rethinking of what is taught and how it is taught within the curriculum itself. For the students, this means that they are being encouraged to look to their own nation's stores of knowledge through extracurricular activities in which they are encouraged to participate. New teaching methodologies are being tried. Of particular success are those that recognize the importance of context-based learning. By using these methodologies, the processes of thinking are slowly changing and this will effect the ways of thinking fostered at universities. One proposal is to incorporate Dhammic studies, derived from Buddhism, into universities.

These new ways of thinking are a combination of *khwaamrúukhângnôog* (outside knowledge) and *panjaakhângnaj* (inside wisdom), a convergence of knowledge inputs that uses a very old, established Thai practice of adaptive balancing.

Conclusion

Thailand is an important regional power in south-east Asia. At present it is experiencing a time of rapid economic development that brings tension into the traditional storehouses of knowledge. Local Thai knowledge and wisdom are being eclipsed by newer knowledge coming into Thailand from the outside. Thailand, however, has a long and proud tradition of adaptation and some Thais believe that this trait of adaptation describes the essence of Thailand. The task is well summed up by the Office of the National Education Commission (1991, p. 17) which says, '[The new graduate] must think out how to produce a well-balanced combination of modern knowledge and local wisdom for future economic and social development'. Traditional knowledge is being blended with newer knowledge to form wisdom that is distinctly Thai and enables Thailand to join the global community as a well-informed regional power.

Note

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MBU: A CULTURALLY

MEANINGFUL FRAMEWORK

FOR EDUCATION IN PAPUA NEW GUINEA

Michael A. Mel

Introductory remarks

We can readily accept the commonality of people's capacity to think and respond. However the universality of having the same bodily structures and functions is no guarantee that people teach, learn and experience the same things in the same way. Birth, marriage, gardening, copulation, constructing houses, making tools, performing rituals and ceremonies, are practised in some shape or form by all people. These processes are part of a diverse spectrum of activities engaged in by the human species. As such, these various activities and phenomena cannot be studied as objective entities. Objects do not possess meaning. Meaning is given by people. In this article I focus on the processes of teaching and learning. Any meaning associated with these activities can only be given by the people who participate in them.

Meaning is ultimately part of a particular context or culture. The notion of culture has been defined in many ways, but for my purposes Raymond Williams' (1976) perception of culture as a 'signifying system' whereby people in various groups and organizations have a system of signs to communicate with each other, is most appropriate. This sign system is not permanent but changes as members come into contact with others from within or outside their group. The way people come to terms with situations is determined by their underlying sign system. The world is seen and understood accordingly, and interpretations of human behaviour must give due acknowledgement to these different systems of meaning.

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This article springs from the concept that no human activities and phenomena can be removed from a particular context and studied objectively, and from the idea that different cultures have different ways of formulating questions and finding answers. Any meaningful study, discussion or exposition of a particular culture's activities must therefore be based on the underlying road maps that guide the actions and interactions of its members. Similarly any imposition of ideas and practices from other cultures must not only acknowledge the differences in meaning, but must enable incoming ideas and practices to be adapted and appropriated by those within the particular culture, so that those changes are meaningful. Failure to examine and acknowledge existing ground rules of meaning may lead to adverse reactions which may not suit the recipient and/or the giver.

The situation

Papua New Guinea (PNG) is dotted with many unique and different cultures. In recent times, for example, researchers have identified more than 700 different language groups, giving testimony to the diversity of cultures in PNG. Within the premise of our definition of culture, each of the various groups has had unique and meaningful histories, systems of knowledge, political and economic structures, beliefs and values that have underpinned their context and provided a sense of location and identity. In each case these processes were governed by the particular world view of the group. World view as a notion relates to the rules and regulations of a society, and to its understood and accepted ways of individual behaviour and social intercourse.

The main thrust of this article relates to education and cultural contexts in PNG. Teaching and learning as processes were defined and practised according to the knowledge system and world view of each cultural group. In particular there were specific ways of teaching the young to become conscientious and productive members of the society. In the last two hundred or so years, following contact with the West, the new system of education that was introduced has dominated teaching and learning practices in PNG. Many Papua New Guineans, including myself, have recognized that the dominating system has not given due recognition to the cultural networks in PNG. The failure to understand and accept the existing local cultural systems began to annihilate many of the cultures. Acknowledging this process of annihilation, Papua New Guineans are now looking to establish more valid systems of education which are based on their own cultural maps. Such models of education will make teaching and learning more meaningful and provide a launching-pad for specific cultural identities within the modern nation of PNG.

Initially I provide a brief perspective on activities prior to Independence in 1975 and after it, during which time Papua New Guineans have sought to find a system of education that is meaningful for their nation. The system of education introduced under colonization appeared to dominate, and Papua New Guineans have felt the need to sever the ties with colonialism and establish a system that they

devised and owned. I will note two ways in which a meaningful education system was sought:

1. Papua New Guineans who were educated under the dominating system of education made soul-searching journeys to various countries around the world. In these reconnaissance trips, however, perhaps through their own naiveté, they failed to reflect upon the ideas of their own land.
2. So-called educational consultants and theorists from the dominating cultures have continued to make peripatetic journeys to sell to Papua New Guineans their commodified theories and models without a great deal of understanding and recognition of the pre-existing cultural systems within PNG. This ignorance has continued to plague educational practices even today.

I then look at my own cultural context and its ideas of education and learning, particularly with children as they grow to become productive participants in the community. I will establish the overall system of knowledge to provide a general framework or world view. Within that framework I explore and develop the process of education as it is understood and practised. This will provide a theoretical framework to look at and discuss current perceptions and practices of education. My focus will be on the Matane Report (1986) and its concept of Integral Human Development. This concept provides the main-frame for the goals and strategies of a meaningful education system. The report has resulted in much discussion of the need to make education more culturally relevant. I will therefore focus on Integral Human Development as a concept and align it with my own conceptual framework, looking at its significance for developing a meaningful process of education.

Transfer of knowledge systems

Prior to self-government in 1972 and after independence in 1975 Papua New Guineans and others concerned with education and learning in PNG have sought a relevant education process. Some of these campaigns began in the 1960s and 1970s with assertions of self-rule and of the need to break the ties with the old colonial masters. Indeed, the striving for relevancy in education was not something new. W. C. Groves, who was appointed the first Director of Education in 1946, spoke of 'vernacular schools [being] developed around local communities with a curriculum appropriate to the activities of such communities' (Avalos, 1993, p. 277). A subsequent director, McKinnon, advocated in 1966 that the education system 'provide options in the form of ideas and values, and for Papua New Guineans themselves to examine the way they would wish to blend cultures' (Avalos, 1993, p. 277). In the quest to find a relevant education process for PNG, various trips and tours were conducted by government and education officials to then newly independent countries in Africa. Delegations also travelled to Australia, the United States, the United Kingdom and Sweden in soul searching trips to find an ideology that was most relevant and meaningful to PNG (Weeks, 1993, p. 261–73).

It is significant that the system of education that was established by the colonizers has continued to be maintained even after Independence. The organization of the curriculum, the compartmentalization of subject areas, the languages of instruction and the conduct of national examinations, all reflect the systems established by the colonial powers. Papua New Guineans who were trained under the old colonial system have continued to uphold it, believing perhaps that they have been doing the right thing by the imperatives of an emerging nation. In so doing they have continued to harbour a system that is in constant conflict with their own beliefs and values of learning and education.

While concerns for a relevant education process are still smouldering, PNG has continued to be the site for innovative ideas and theories about education, and specific models and methods imported from other countries. Curricula that work in some countries, particularly those of former colonizers, are being transferred as wholesale packages and established in PNG. O'Donoghue (1994, p. 73–88) notes particular attempts to transfer mathematics and social science programmes based on theories of learning from Australia. Drawing upon universalist assumptions, children in PNG have been presumed to learn at the same rate and in the same manner as children in the West. The limited success of these new programmes has been disappointing. Students have not displayed the 'usual' or predictable outcomes. Such failures have erroneously been judged to reflect the students' cognitive inadequacies. The proffered curricula have failed to acknowledge that children in PNG are part of complex, pre-existing systems of knowledge analysis and transfer. What may have seemed new and brilliant ideas about education and learning from abroad have not worked because of the failure to recognize the underlying local cultural network.

The search for relevance

Over the last two decades education and the way it has been structured and practised since colonization has lost some of its credibility. The PNG public at large perceives that education has not been able to deliver what it promised. Schools have been viewed as locations where students gain the intellectual skills to fit them into the social and economic system of the country. The emphasis placed on end-of-school examinations, and the significance given by employers and education authorities to examination results, has encouraged undue emphasis on gaining formal qualifications and obtaining a job.

Schools have had an obsession with examination results to the point of competition with neighbouring schools and others around the country. Results have been compiled nationally and schools ranked in terms of their comparative success rate in each subject. This has influenced the public's perception of particular schools and their administrative and teaching staff, resulting in many parents seeking to enrol their children in 'academically successful' schools. The comment of Anis (1990, p. 20) that 'Education has got to be seen as a preparation for life rather than purely as an investment', epitomizes the challenge facing PNG today.

At a recent education seminar in Port Moresby the then Premier of New Ireland Province argued that education was losing 'its relevance to a lot of children and parents in the country', and advocated that education be made 'more relevant to their needs and aspirations in the village' (Anis, 1990, p. 20). The PNG Education Department in its recent education reforms has viewed the present system as harbouring a 'curriculum which is no longer relevant to the needs of PNG and its people' (Papua New Guinea, NDOE, 1993, p. 2). The Matane Report (1986) aimed among others things to provide a philosophical background to education in PNG, advocating a system that built on PNG ways by addressing questions such as, 'What kind of citizen should we now be educating?' and 'What kind of education is necessary to produce this citizen?' These kinds of questions underline the search for a relevant education.

Any answers to these questions need careful thought and consideration. Historically the answers seemed readily accessible and were sought through colonial administrators and international educational theorists and consultants. The experiences of other colonies also appeared to provide some answers. By and large, however, the search for a national ideology of education seems to have been enveloped in the myths spun by the dominant powers. Those myths must now be scrutinized to see what they entail. What skills, knowledge, values and beliefs do we need to impart? Are these encapsulated in the dominant culture's educational theories and models? Such a process of critique would enable Papua New Guineans to discover the limitations of Western ideologies. Indeed these theories and models may no longer be viable or valid. Avalos (1993, p. 290) accentuates the need for careful scrutiny by echoing Narakobi (1991):

the Papua New Guinean people must not let themselves be enslaved by thought processes and assumptions that are taken for granted; for if they persist in the 'particular perception of what a pot should look like and take the clay and shape it into that image, then in a short time they will find that it will not be able to contain the water needed to nourish our society'.

Narakobi's concerns are also raised by Thaman (1990, p. 4) when referring to curricula in the island nations of the South Pacific as 'too deterministic, in that there is a tendency to overemphasize the need for people to adapt to their physical and social environments, rather than to deal with their role in changing these environments'.

The search for change peaked in 1986 with Sir Paulius Matane's *A philosophy of education for Papua New Guinea*. The Matane Report, as it has come to be known, was prepared by a committee chaired by Sir Paulius Matane, a prominent elder in PNG. Instigated by the then Minister for Education, Aruru Matiabe, the committee was asked to critically examine the philosophy underlying the educational system in line with the goals and directives of the National Constitution. The committee was asked to propose new guidelines that would provide a more meaningful system of education for PNG.

The report is built on the concept of Integral Human Development. Structured around it are a number of key goals and definitions for education in PNG. I will focus on the concept of Integral Human Development and relate it to my own cultural context, thus allowing a closer examination of how education practices can re-affirm the knowledge systems of PNG cultures. By adapting their own knowledge systems in the face of contact with and influences from other cultures, the many and unique cultural identities of PNG can be affirmed and consolidated.

I will now look at my own culture to examine its world view and then, within that framework, I will establish the way education and learning have evolved at the pedagogical level.

Local knowledge systems

THE MELPA CONTEXT

I am from the Mogeï culture in the Melpa area of the PNG highlands. Our world view is framed around the concept of *Mbu*. This discussion serves as a conceptual framework in discussing the concepts of *Noman*, *Mbu Noman* and *Nuim* which at a pedagogical level are at the heart of learning and knowledge creation in the Melpa context.

The world of the Melpa has meaning and significance through the concept of *Noman*. This is an all-encompassing concept relating to thinking, knowing, feeling, understanding, remembering, and living. Each person or *Na* in the Melpa has *Noman*. By putting the two concepts of *Na* and *Noman* this way does not mean that they are two separate entities. Both are bound inextricably as *Nanga Noman*. Thus to speak of *Na* is to speak of *Noman*, and vice versa. *Nanga Noman* is not an entity. In other words *Nanga Noman* cannot be referred to as things that are tangible and transcendental. The *Na* and *Noman* are, in effect, entities that are dynamic and processual. To think, know, feel, understand and so on, is to continually define *Nanga Noman*.

The dynamic process of *Nanga Noman* is symbolized in *Mbu*. *Mbu* in the literal sense means seed. As a metaphor *Mbu* symbolizes identity, knowledge, and relationships. Geertz's (1973; p. 89) reference to symbols as providing a 'picture [people] have of the way things in sheer actuality are, their most comprehensive ideas of order' can be aligned to *Mbu* as a symbol that underwrites the Melpa world. There is a deeper level of this concept which I will now elaborate to show how the Melpa world is conceived and constructed.

The *Mbu* concept is structured in a triadic system with the notions *Mbu Iamb*, *Pulg Iamb*, and *Mbu Kola*. Bond (1990) writes of a triadic structure for people at an ideological level which defines the world and sets particular conceptions and practices. Briefly Bond identifies the triadic system as people, authority and boundary. These are not separate entities but are interrelated and overlap each

other. People have the capacity to look at the world, to question it, and thereby locate their position in it. The world is the boundary. This boundary does not have any meaning or value of its own. Meaning and value must be given so that it becomes knowable. The knowable world is invested with meaning by the people. By giving meaning to the world people create authority. Authority defines the boundary and in turn recognizes and acknowledges meaning as invested by the people.

Transposing Bond's triadic system onto the Melpa, *Mbu Iamb* are the people, *Pulg Iamb* the authority, and *Mbu Kola* the boundary. *Mbu Iamb* (a literal translation would be seed person/people) as a concept relates to people. *Pulg Iamb* (root person) has to do with relationships between people at both a real and a spiritual level, with ownership, and with the physical environment including land. *Mbu Kola* (seed place) is the knowable world. This intricate tripartition is intertwined to provide the concept of *Mbu*. *Mbu* situates and constitutes the *Mogei Na* (individual) in a system of relationships. *Mbu* is the prime conceptual location from which the *Nanga Noman* becomes real and actualized through *Mbu Ugl* (things done for seeds). The conscious and thinking *Na* gives meaning to the material and social relationships of *Mbu*. *Mbu* provides a sense of identity and structures all activities.

Thus far it is quite easy to think of *Mbu* as a pristine cultural map, a transcendental structure that constitutes *Mbu Iamb*. The symbolic landscape of *Mbu* is part of a conceptual framework that is not durable but processual. *Mbu* is constructed by the *Iamb* as *Iamb* are constructed by *Mbu*. In this constructive process the *Mbu Kola* is not to be viewed as an exclusive cultural site of bliss and harmony but a competitive terrain where each *Na* is constantly negotiating meaning and imposing meaning. The *Na* is a dialectical process between *Mbu* and *Nanga Noman*.

In relation to knowledge and knowledge creation, *Mbu* is reified by the *Na* through *Noman*. As *Nanga Noman* makes contact with *Mbu*, each contact is a marker from which the *Na* constructs knowledge. Knowledge viewed in this way is not a bundle of fixed ideas, facts or figures passed on through the history of *Mbu* but is something that is continually being created and recreated. *Mbu* is a temporal experience rather than a teleological project, and in that sense knowledge is an evolving process rather than something that is set.

KNOWING

Having discussed the nature of being in my own *Mogei* context I will now explore the ways in which education and learning occur. The concepts that are closely related to learning are *Noman*, *Mbu Noman* and *Nuim*. The relationship is seen in the following way. *Noman* relates to knowledge and knowledge creation. To have a *Noman* is to know, feel, see, understand, and be instrumental. For the *Mogei* all people (male/female/ young/old) have *Noman*. Learning in the *Mogei* context is to nurture and develop the *Noman*. The nurturing of the *Noman* leads to *Mbu Noman*. *Mbu Noman* relates to an individual's skill and dexterity in articulating

language; to knowledge of history and social relationships; to the ability to reason, argue and negotiate problems and issues within the local context and with outsiders; and to show respect for family and relatives. Any individual who is able to display these values relating to *Mbu Noman* attains the quality of *Nuim*. *Nuimness* relates to an individual's intellectual ability and to social and moral responsibilities. In the Mogei world-view education is not seen as developing the intellect separately from social and moral norms. The concept of *Nuim* in education and learning encapsulates both. Indeed, for the Mogei, being morally responsible and having intellectual skills is one and the same thing. The essence of *Nuim* relates to being acknowledged and respected by those within the community. Individuals who have *Nuim* reflect the triadic relationship of *Mbu*.

Within the Mogei context the concepts of learning cannot be interpreted in terms of various stages of learning and development. In other words a *Na* does not acquire *Noman* first, then *Mbu Noman* and finally *Nuim*. A Mogei child can have *Mbu Noman* and attain the quality of being *Nuim*. All individuals when born are assumed to have a *Noman*. The *Naís* capacity to know and make sense of the world is recognized from birth.

Mogei children are recognized as having a *Kangambulga Noman* (children's *Noman*) which means that children are viewed as having an inherent ability to think and interpret the world. The *Kangambulga Noman* is given knowledge that is necessary for the child to establish contacts and find a niche. Language acquisition, for example, is seen as an important aspect for that process and so is taught early. Children who display a good level of language and who are able to articulate are seen to have a *Mbu Noman* which leads to attaining the qualities of being *Nuim*.

LEARNING

The actual processes of teaching and learning are encapsulated in the concept of *Mbu* which can be interpreted as a seed. The seed as a metaphor for learning in Mogei culture is a useful analogy. A seed has the power to grow and find a location within a particular niche. Through nurturing and care the seed sprouts. The growing plant bears leaves, obtains food and gradually assumes a place in the environment. In the Mogei context this picture of organic bliss can be misleading. A growing plant has to fend for its well-being against the elements, and compete with other plants for food to gain strength and grow. Vital ingredients that will enable the plant to secure a niche are provided early. As the plant grows, new and complex information, skills and knowledge are acquired.

Acquiring a working language enables children to be involved in activities that reinforce language and at the same time foster new experiences. Sometimes children observe parents and relatives and eventually attempt the activities themselves. These observations and attempts mean that the children have more control over activities. The children have an influence on the length of time and the pace of activities. Changes to particular procedures can also be engendered by the children

if they feel the need. Children are also aware that parents and relatives are available for consultation and to answer questions. Apart from observation, at other times there is direct contact between parents and relatives. During these sessions parents and others sit alongside the children to demonstrate or explain how things are done and tell them about their history, beliefs and values.

Learning in the Mogeï context is an integral process. Parents, uncles, aunts, and others take on the responsibility of teaching the children. Some of the skills and information taught are of immediate use while others will be useful later. Teaching is not a process that is largely controlled and manipulated by adults. Children learn in the context of living. In doing so, all that is gained is meaningful because it enables the individual to become an active participant within the community. In the Mogeï context the process of education and learning involves the young acquiring their knowledge through listening, watching, practising and participating. More significantly the Mogeï understand the child as an individual with a *Noman* to enquire and acquire, and in so doing are able to create their own knowledge. The individual *Na* is the prime location for learning what is deemed necessary for the individual to create and to live meaningfully.

Our way

The Matane Report (1986) is centred around the notion of Integral Human Development. It explains this concept in the following way:

Integral in the sense that all aspects of a person are important; Human in the sense that social relationships are basic; and Development in the sense that every individual has the potential to grow in knowledge, wisdom, understanding, skill and goodness (Matane, 1986, p. 6).

The articulation of each of these three perspectives provided a strong impetus upon which the rest of the document is built in order to define education in PNG at a philosophical level. These cultures 'operate[d] within a framework of spiritual, social, physical/economic and political needs, which [were] integrated together and [were] the basis of life itself' (Matane, 1986, p. 7). The adoption of this framework re-affirmed the local systems of knowledge.

In the context of *Mbu*, importance is placed on the *Na* (individual) who has a *Noman* to enable him/her to find a niche within the community. Community members provide the individual with a degree of latitude which fosters knowing and learning, thus enabling the individual to find value and respect within the community. As a general conceptual framework, Integrated Human Development provides meaningful insights.

One intractable problem that the report identified in the introduced system of education was the high degree of fragmentation in the child's experience of school. This fragmentation related to a wide variety of structural factors. It also influenced the way knowledge was conceptualized into distinct subject areas. Each subject

seemed quite independent from the others in terms of content, its relationship to knowledge in the world, and its relevance in education.

The major concern was that fragmentation had led to importance being placed on some areas of learning while others received very little or no attention at all. More specifically the report identified that 'more attention [was] being paid to political and physical/economic needs and scant attention being paid to the social and spiritual needs of students (Matane, 1986; p. 5). With Integral Human Development, thought must be given to all aspects of the individual learner, that is, to the social, spiritual, political, economic and physical needs. The Matane Report suggests that spiritual needs relate to values and beliefs, social needs to relationships with people, political needs to individual decision-making and physical/economic needs to the use of resources.

Within the framework of *Mbu*, values, beliefs, knowledge and skills, while not actually spoken of in this manner, were learned by the children. As they continued to grow and participate within the community, these various aspects were strengthened. In the teaching and learning process in *Mbu* there was not necessarily a subject or bracket of knowledge to know or a specific skill to acquire. While there were 'things to do and learn' (*Mbu Ugl*) they were related to the particular context. For example, there were things to learn about how to hunt, how to fish, when to do these activities, what not to do when performing these activities, where to hunt and fish, the kinds of animals to catch, what to let go and so forth. All aspects of the knowledge and values of the community were part and parcel of the process of learning.

What is also significant in the fragmentary view of education is that schools are often located away from communities, and as such have been seen as places to train people for jobs. Such a perception distorts the picture of the school as an integral part of a community, and the education process as a responsibility that not only lies with the teachers but equally with the community. Colonial practices placed an emphasis on subjects, knowledge and jobs, but not on the values and beliefs of the community. By shifting the emphasis, children will have closer contact with their own parents and relatives, and be able to participate more extensively in community life. The community will help and advise in varying degrees on curriculum content and process, on the location of schools, on the maintenance of classrooms and facilities, on staff appointments and on the language(s) of instruction. The community's values and beliefs will become an integral part of the children's education, enhancing their sense of place and identity.

In the colonial context, institutions like the family and the community have had little or no influence in matters relating to schools and choice of subject matter taught. On the other hand the Mogeï context acknowledged all members of the community as meaningful and useful participants in the process of *Mbu Ugl*. To have a Mogeï individual educated was to make him or her skilful, knowledgeable, responsible and to value and respect others within the community. The overall thrust of the Matane Report certainly values the contribution of the knowledge systems in PNG that were in place well before influences from the outside arrived.

This is not to say that the ideas, values and beliefs that were a part of contexts like the Mogeï were not liable to change. People as part of a system were engaged in its maintenance and change. The introduced systems, however, have become dominant, leading to a gradual annihilation of the multifarious cultural terrain of PNG, transforming it into a singular society buffeted by consumerism. The Matane Report and the subsequent reforms are a way to counter this cultural hegemony and begin the process of re-establishing our own systems of value that are more meaningful.

Conclusion

The Matane Report has been a watershed for education in PNG. The people of PNG were either unknowingly or through a sense of naïveté participating in and perpetuating an education system that taught their children to become aliens to their own culture. The Matane Report aligns our own systems of beliefs and values, and of teaching and learning, as meaningful processes that can provide a strong foundation for building diverse yet meaningful communities. On paper and at a philosophical level the Report has been applauded by Papua New Guineans and others because it values PNG ways of knowing and doing.

What now needs urgent attention is the long and arduous process of re-examining current school structures, the curriculum, teacher education programmes, examination systems, and of educating the public at large about the benefits of such changes. What is not needed is the easy task of paying lip service to recognizing the cultural significance of such work while continuing to maintain the dominating and irrelevant system of education that has choked our diversity.

Within institutions like the universities there is a need to establish teaching and research locations with a particular interest in developing and maintaining many of the rich and varied systems of knowledge. By saying that Papua New Guineans should focus more closely on their own systems of knowledge I am not advocating a total break from the dominant system. We do need to learn about the ways other cultures work so that we can communicate and compete with them. Indeed there is enough evidence to suggest that many of the ideas that were brought from other cultures have been well adapted to suit our needs. By focusing attention based on our own system of knowledge, values and beliefs we may find answers to some of the social and economic problems that continually bombard our people. The dominating systems may not necessarily have the right solutions. In the words of Bernard Narakobi (1990, p. 239): 'We cannot build a nation simply from technology, we cannot build a nation purely on the basis of the wheel and on the basis of the steam engine. We must build this country, we must build our civilization, on values that have been passed on from generation to generation'.

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EDUCATION FOR CULTURAL IDENTITY:

A FIJI CASE STUDY

Unaisi Nabobo and Jennie Teasdale

The context

Fiji is an archipelago of some 300 sub-tropical islands in the South Pacific Ocean, supporting a multi-ethnic population of approximately 750,000. Half of this population is comprised of indigenous Fijians, 45% are Fiji Indians, and the remaining balance includes ethnic minorities such as Rotumans, Chinese and part-Europeans (Douglas & Douglas, 1994). The nation is regarded as a very desirable tourist destination: the consistently warm climate is appealing to many winter-bound Westerners; its people are extraordinarily friendly and accommodating; the government sees tourism as its most lucrative and viable industry; and, to visitors, its political uncertainties and struggling post-coup economy are largely invisible.

Over a period of 3 to 4,000 years the indigenous Fijian people developed a unique, closed culture. Visitors were few and would-be invaders from neighbouring islands were quickly repelled by the impressive Fijian warriors. Possessing a stable yet internally volatile culture, Fijian people knew who they were and affirmed their identity. Living in regional clusters, their values focused on commu-

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Has a deep interest in cross-cultural education from a sociological perspective. A major focus of her work has been research, writing and teaching in relation to Aboriginal Australians. She has also been involved as an adviser in several Australian aid programmes in the South Pacific region. She currently teaches part-time at Flinders University in Adelaide, South Australia.

nal living, reciprocity, a hierarchical, male-dominated system of chiefs, and an ability to sustain a rich livelihood from lushly vegetated tropical islands and plenteous surrounding seas. Traditional modes of education ensured effective cultural transmission, and the young were able to follow in the footsteps of their elders with confidence. In essence, there were no 'drop-outs' in Fijian society. All children were educated to the level of their capabilities, their rich cultural heritage being perpetuated from generation to generation.

The colonial coming

This security of tenure and lifestyle ended abruptly in 1874 when Fiji was ceded to the United Kingdom in return for the payment of an outstanding American debt. Colonialism came, conquered, and changed forever the Fijian people's world view. A complex, closed culture was suddenly opened and exposed.

The British were also interested in Fiji for the trade potential of the islands: sugar, spices and timber promised opportunities for colonizers. The underlying motivation of the times to civilize and Christianize also added impetus to the colonial endeavour. Deals were struck and deeds signed, although not without some bloody battles and massacres. In a short period of time Fiji's cultural destiny was radically altered while an alien culture, which represented the values of a newly industrialized Great Britain, swept across the two larger and most populated islands of Viti Levu and Vanua Levu.

The colonial take-over brought both ill and good to the Fijian. Although much of what was lost of pre-colonial tradition would today be regarded as pagan, evil or backward, Fijians believe that the meeting of the two cultures resulted in the loss of many traditional values and customs that were regarded as sacred and that had their deep-seated respect.

Perhaps the most radical change came with the cultivation of sugar cane. British colonizers, specifically Sir Arthur Gordon, the first governor, deemed it unacceptable to disturb traditional Fijian village social organization. This policy of non-intervention led to the importation of cane labourers from the then British colony of India. Indians were lured with promises of a better life in Fiji. While it may have been a better life for some, the long-term affects of dislocation were never anticipated. As usual, the economic dictates of the moment determined an immediate solution that had far-reaching consequences.

The first shipload of 498 indentured Indian labourers arrived on Fiji's shores in 1879 in the vessel *The Leonidas*. Successive shiploads brought a total of 60,000 Indian labourers. Crowded together on ships, the stringent Indian caste system was irretrievably violated and thus began a process of cultural erosion for the immigrants. In a relatively short space of time, the indentured labourers settled, and succeeded in making the sugar industry viable. Steadily their population increased and by Independence in 1970, having several generations of family behind them, they had recreated and syncretized their own culture in the Fijian context. They farmed,

developed very successful local businesses, and became firmly entrenched in Fijian society, knowing no other real homeland.

Education and culture

Prior to the colonial coming, indigenous Fijians had a holistic culture which dictated every aspect of their lives. Education, which was not separated from culture, began at a child's birth and continued uninterrupted until life ended. A Fijian child was born into a family and a clan, each clan had a specific role or duty to perform (as warriors, fishermen or carpenters, for example), and all these roles were interdependent. It was obligatory that all clans played their part so that a village could achieve a comfortable degree of self-sufficiency. Children were given education specific to the role of their clan; they were taught the arts, skills and knowledge of the special duties they were expected to perform. In addition they learned that reciprocity, respect and humility were prime values and thus an integral part of that learning. Though roles were clearly designated, they were not separated or compartmentalized; they merged into the whole. Education and culture flowed together.

With the advent of colonialism came schooling. This Western phenomenon, born out of the industrial revolution, was thought by colonists to be the only right way to set the young on a correct educational pathway, especially if intertwined with the church and its various expressions of Christianity. Thompson (1972, p. 141) writes:

The Fijians, like most pre-literate people, had no very formal system of education before the coming of the missionaries. The Wesleyan Methodists [. . .] began educational activities among the natives. They reduced the native language to a written form and translated the New Testament. They introduced a system of village schools in which reading and writing the vernacular, arithmetic and religion were taught by village pastors.

Young Fijians were soon subjected to missionary schooling. At times they were coerced into it. Some schools had been established by Indians for their own children but, later on, missionary schools were established for them as well. In both cases the introduced schooling replaced traditional, community-based education.

Indians had a long-established history of literacy and schooling, thus Indian children grasped the teachings of their imported educators with alacrity. In contrast, Fijians, from a traditional culture that depended on oracy rather than literacy, and on learning by observation and doing rather than 'talk and chalk', found schooling foreign and alienating. The colonial teachers pressed on regardless of these difficulties, recognizing neither the languages nor the cultures of the learners. All teaching was carried out in English and focused entirely on Western content, with little consideration for the learners' culture.

By the dawn of the twentieth century, a generation of young Fijians had received a mission school education. They were taught that they lived in a small, remote part of a vast world (Wright, 1986, p. 9), but that there was a way to

improve themselves. That way required leaving tradition behind and conforming to the introduced norms of an alien system of teaching and learning.

Schooling gathered pace. The simple one-room mission school located in the village gave way to increasingly larger primary and secondary schools. The first government schools were for the sons of Fijian chiefs, the *Vulinitu*. These schools reflected the classical, humanist philosophy, where 'the men of gold', as Plato referred to them, were groomed for leadership posts in government. Later, other government schools were established for girls and other less-privileged children, including Indians. Girls and boys were segregated, as were Fijians and Indians. A teacher's college was opened in 1947, and various other tertiary institutions followed. A significant mile-post in Fiji's educational growth was the opening of the University of the South Pacific in 1968. Its initial responsibility was to train secondary teachers, both for Fiji and the wider Pacific region. All educational institutions perpetuated the ethos of Western education; the underlying values of colonial powers, and later neo-colonial powers, were ever present.

Fijians and Fiji Indians, particularly the latter, learned the instrumental value of Western schooling. Parents saw the gathering pace of Western education and the opportunities it offered, and so exhorted, cajoled and even tried to force their children to do well. Success in the schooling system became highly respected. Examinations were a focal point. It was not uncommon for parents and relatives to hold large feasts for children who had done well in some external or qualifying examination. The importance attached to school success quickly relegated cultural learning to the margins of a child's life. Success in examinations became indicative of the quality of one's parents; one's success was said to be the result of a 'proper upbringing', and so parents gained status from academically successful children.

Although schooling *per se* gathered pace, many would argue that education lost ground. The focus and thrust of schooling was indisputably Western. The sustaining traditional modes of education embedded within the Fijian and Indian cultures dramatically lessened. Thus, the Fijian culture changed, as did that of the Indians. Traditional education played a secondary role because people had little time to give or receive it. Although its values remained in the hearts and minds of the older generations, they had neither the opportunity nor the time to promote it. Only in remote rural areas, such as distant islands or mountain villages, did traditional Fijian education remain relatively intact. Clusters of rural Indian farmers also maintained their mores and cultural customs, thus enabling some Indian children to be educated in traditional ways. Curiously, in the face of such radical change, traditional languages adapted and remained strong with only a tiny minority using English as their preferred or first language.

Background to the case study

Against this contextual background of geographical, historical and social factors, it is useful to construct a picture of the Fijian peoples in the 1990s. In 1987 two political coups had a significant impact on the social fabric of Fijian society and its

cultures. An immediate outcome was the re-assertion of the dominance of the indigenous Fijian people. Fiji's membership of the British Commonwealth of Nations was severed in 1987 when it declared itself a republic. Many Fiji Indians saw insurmountable difficulties in this new political climate. Naidu (1988, p. 4), a prominent Fiji Indian academic, described it as the destruction of multi-racial democracy in Fiji. As a consequence, the immediate post-coup period saw the exodus of many qualified Indians.

One of the hardest hit sectors was the schooling system. More and more, untrained senior secondary school graduates were recruited to fill teaching posts in junior secondary schools vacated by migrating teachers. In an urgent attempt to overcome this critical shortage of secondary teachers, the Fiji government worked towards the opening of a college of advanced education whose initial task was to train large numbers of teachers as quickly as possible. With development assistance from Australia, the government opened the Fiji College of Advanced Education in 1992. Professional educators from Australia were employed to work as training counterparts with Fijian and Fiji Indian lecturers who had been selected because of their outstanding record as teachers in the school system.

The core courses of the two-year training programme focused on preparation for teaching. The School of Education within the college was responsible for planning and implementing appropriate courses. Staff agreed that the courses must strive to contextualize the teaching/learning processes, and that all courses must respect and affirm the cultures of the trainees. The major task of integrating culture and learning fell to the two sociologists, the authors of this paper.

Education and culture integrated

In a collaborative effort, we developed a course that focused on both Fiji and the wider South Pacific region, and that encompassed the traditional education of pre-colonial times, the colonial impact, and contemporary educational challenges. The course was called 'Education and society in the South Pacific', and its rationale expressed in the three-phase model presented in Figure 1.

The cultural climate of the college was a microcosm of Fiji society at large. Classes normally consisted of equal numbers of Fiji Indians and indigenous Fijians. The course therefore needed to affirm the cultural differences between the two cultural groups while still recognizing their common bonds. Ultimately trainees needed to be personally affirmed and strengthened in their own cultural identity so that they in turn could become effective agents of cultural renewal in the classroom.

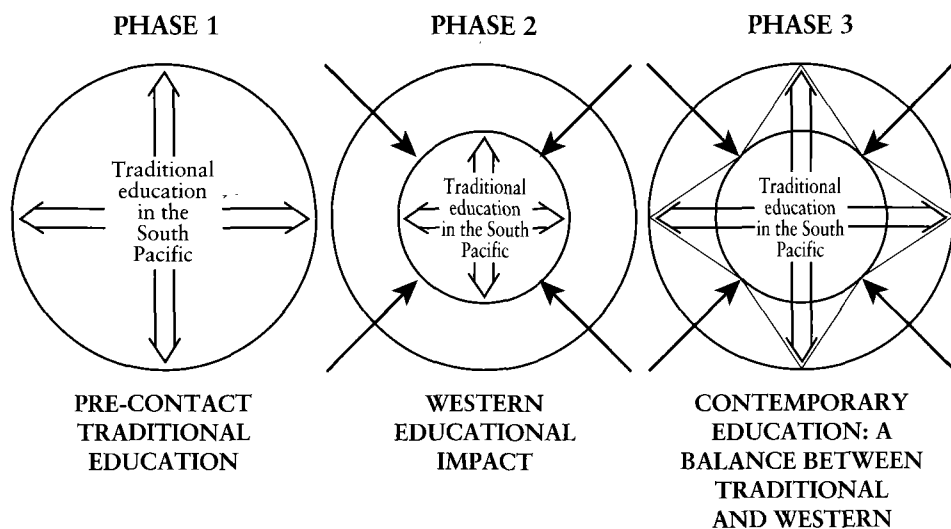
Based on the premise that education is an act of love and therefore meant to uplift, free and bring out the best in people, and at the same time recognizing differences in the human race, the course writers began their journey. Valuable insight was found in the words of the Cook Island's Prime Minister, Sir Geoffrey Henry, when he quoted the old Chinese proverb: 'We cannot know the village where we are going unless we know the village from whence we came' (Henry, 1992, p. 14).

Believing that it is a human right to have a culture and to be identified with it if one so wishes, the authors' objective was to enable each trainee to re-discover and re-affirm their cultural roots, that is to explore *the village from whence they came*. This was to be the starting point of the programme: 'Every child ought to learn the traditions of the particular human society into which she or he is born', asserted Dr Konai Helu Thaman, distinguished Tongan educator (Helu Thaman, 1992, p. 52).

Reflecting on *whence they came*, that is, the traditions of the particular society into which they were born, would enable trainees to consider more realistically where they were going and how they might get there. Colin Power, Assistant Director-General for Education at UNESCO, claimed that 'a culture will decay if the people are not able to affirm their own destiny'. As key educators of Fiji's immediate future, trainees needed to 'recognize the significance of cultural identity as the living core and driving force of all cultures' (Power, 1992, p. 9)

With these thoughts in mind, a rationale for this course entitled 'Education and society in the South Pacific' became clear. It is expressed in the following three-phase model.

FIGURE 1: Course model for 'Education and society in the South Pacific'



In light of this rationale, the authors themselves felt that they needed to embark on a personal, reflective, cultural journey of self-understanding about the past (phase 1), the present (phase 2) and the future (phase 3), to better facilitate the trainee's understanding of the process. This proved very useful as a role model of cross-cultural understanding for trainees, and added impetus to their commitment to the course.

The methodology of the course became pivotal to its success. An interactive, participatory approach which enabled trainees to have a significant role in their

own research and learning was used. We found that trainees in this Fijian context preferred to work collaboratively in groups. We also learned that trainees were more successful in making oral presentations than they were at producing written work. After careful deliberation, a format was decided upon which included a weekly one-hour lecture focusing on contextualized information, followed by a two-hour trainee-managed and controlled workshop based on oral presentations.

The course aims were clear. All trainees who participated in the course would, through a process of praxis:

1. Rediscover and re-affirm their own cultural identity;
2. Be enabled to respect and affirm the cultural identity of the other;
3. Be confident of their own cultural identity as beginning teachers in Fiji's junior secondary schools; and
4. Enable children in schools to recognize their own culture and be proud of it.

The trainees' response

In 1992 approximately eighty trainees were selected from almost 1,500 applicants to undertake the two-year teaching diploma programme. They were chosen according to academic excellence, experience and personal suitability. The majority came from rural Fiji and would return to teach there. A gender balance was struck, with 50% of the trainees coming from the indigenous Fijian population and 50% from the Fiji Indian population. During their first year, trainees underwent intensive academic training in their chosen subject areas, in the English language and in a largely theoretical teacher education programme. They also participated in a brief school-based period of practice teaching. This first year of the programme followed the clinical, Western-based education which the trainees had experienced throughout their school careers.

The authors saw themselves as harbingers of change and while uncertain of how their new approach might be received, they felt sure that the direction they were moving in was appropriate. This was ratified by the Academic Board of the college.

Observations of trainees at this stage showed that they stayed largely in segregated cultural groups during classes, and that clubs and societies revolved around exclusive cultural interests, such as a choir for Fijians, and sports like soccer for Indians and rugby for Fijians. In class, trainees wore Western clothes, spoke exclusively in English, and depended on listening to lectures and reading recommended texts for learning. Assessment was dominated by written examinations which primarily required trainees to reproduce what had been heard in lectures or read in texts. Fijian trainees lagged behind their Indian peers in written performance (Puamau, 1991, p. 5)

In summary, trainees were perpetuating their school performance, because up to this point they had not been given opportunity to explore other means of learning. Culturally, they appeared to lack confidence, preferring to use their first languages, Fijian, Urdu or Hindi, away from the formality of the college. They also

preferred to celebrate cultural events quietly. Interaction between Fijians and Indians was minimal and somewhat restrained.

In 1993, trainees, fresh from a holiday break, returned to college with enthusiasm, ready to begin their second and final year of training. The authors introduced 'Education and society in the South Pacific' with the following visual cue, an illustration drawn by the college's lecturer in art, Ranbir Singh (see Frontispiece to this 'Open file'). Each trainee was given a comprehensive, visually attractive course and workshop programme. It included a copy of the course model and this illustration, which became the *leitmotif* of the course. The curious bundle carried by the non-Western person in the illustration stimulated lively discussion about culture, education and change, and directed trainees to begin reflecting on the three-phase model. Perhaps the most direct challenge they faced was that for the first time they were to take full control of the workshop sessions. The structure of these sessions allowed for formats as diverse as oratory, ceremony, dance, demonstration, debate, discussion, dialogue and audio-visual presentations. It also allowed co-operative group presentations. After their presentations, trainees wrote individual papers reflecting upon and linking together lecture content, literature, research and their workshop experience.

The spirit and stride with which teacher trainees undertook this course cannot be adequately expressed in words. Few of the trainees missed a single session, many attended not only their own workshops but others as well. Interested staff from other sections of the college also attended workshops. Trainees approached these sessions with great enthusiasm. Working collaboratively, they explored their selected topic, often involving themselves in voluntary, practical field research within their own cultural communities, in addition to the reading and reflection that was required. The group process was greatly facilitated by the residential nature of the college. Workshop presentations were profound, professional and polished, and were thoroughly enjoyed by lecturers and trainees alike.

It was during Phase 1 on 'Pre-contact traditional education' that trainees excelled. They displayed a high level of confidence and ease in making presentations. Most of their research focused on questioning their own parents and grandparents. They showed a remarkable capacity to translate traditional knowledge into action. Taking to the stage, they demonstrated, danced, orated, sang and dramatized, suggesting that traditional Fijian and Indo-Fijian culture was still alive, particularly in rural areas. They displayed their cultures with pride, exposing not only explicit but implicit values in such a way that those who observed from outside were caught up in the energy, the vibrancy and the deeper meanings of their presentations. In the written requirements of the course, Fijian trainees rarely showed the skills evident in their workshop presentations. Usually Indo-Fijian Fijians wrote well and performed with less flair and panache in workshops. Traditionally, Fijians learn through observation, imitation and participation, not by writing, whereas Indo-Fijian Fijians are comparatively experienced with written responses. The response of the trainees in written work perhaps shows that traditional modes of learning are maintained in non-traditional learning situations.

At the commencement of the workshop programme, it was evident that Fijians and Indo-Fijians preferred to work in culturally homogenous groups. As the course unfolded, intermixing increased, and sometimes during role plays trainees began to take on the role of a person from another culture. This was usually greeted with good-natured laughter, but it undoubtedly helped to ease the relationships between the two cultural groups. By the end of the course, trainees appeared at ease with cultural differences, and were more able to affirm their cultural identity. Interestingly a significant number of trainees regularly began wearing traditional clothing to classes rather than the Western fashions which had been the preference at the beginning of the course. Trainees felt confident in using their vernacular during this course, but were hesitant to use it in most other classes.

At the conclusion of the course, a systematic evaluation was conducted. Trainees almost unanimously affirmed that they felt a greater pride in their own culture and were more aware and more secure in their own cultural identity. They also stated that they had gained a new awareness and respect for people from cultures other than their own. Certainly, they felt a deeper commitment to becoming culturally affirming as teachers, striving to bring at least some aspects of traditional learning into Fiji's classrooms. External evaluators from the University of the South Pacific also affirmed the content, structure and methodology of the course and commended the positive outcomes evident in trainees' attitudes and behaviour.

Indeed, it was gratifying to have achieved the set objectives with such conviction. However, they had been achieved in the relatively closed, sheltered and supportive environment of a residential college. The question remained as to whether these trainees could sustain their revitalized cultural identity in their lives outside the college, and whether they could encourage the students in their classrooms to recognize the importance of culture in their lives.

Had the graduating teachers of 1993 been able to carry their apparently newly awakened cultural identity into the classrooms of Fiji? Had they been strong enough to affirm the cultural identity of the students they taught? Or was their cultural identity too fragile to withstand the pressures of a strongly entrenched, unidirectional Western-style education system? When this group of young graduate teachers had almost completed their first year of teaching, the authors contacted them to find out the longer-term implications and effects of the course. Analysis of the returned questionnaires revealed the following information.

In 1994, trainees, now teaching predominantly in rural schools, indicated that they were able to maintain and strengthen their cultural identity by participating in community activities and ceremonies. The rural isolation they experienced in their villages where traditional culture is less eroded and where radical, new ideas are frowned upon, enabled them to be culturally strong.

In the schools, they found that the major opportunity for cultural education in the classroom was through music and dance classes. They used these opportunities to talk with students about the importance of culture and cultural identity. Oratory contests and drama competitions also provided opportunities for the

exploration of culture. In some schools a period had been set aside for cultural activities and education. The graduate teachers stated that, because their own awareness of the importance of culture had been raised, they consistently urged students to discover their own cultural identities. They felt that the school could be the force behind cultural education, but that as yet, little had been done to promote this. They suggested that the whole issue needed further support from the Ministry of Education.

It was stated that the increasing exposure—even in remote areas—to foreign values and ideas needed to be counter-balanced with cultural change. The graduates suggested that this would be easier in village schools, especially with supportive teachers and the appropriate administrative structures. Urban schools provided a much greater challenge. They felt the greatest impediment to cultural education in Fijian schools was the examination system. Teachers and parents were focused on examination success and saw little room for activities and classes which did not support students preparing for exams.

Interestingly, respondents suggested that the political coups had probably initiated a cultural re-awakening for indigenous Fijians, particularly in community life. However, an increasing number of Fijian parents, especially in urban centres, looked to the schools to provide cultural education.

Reflecting back on their college training, graduates strongly endorsed what had been taught, but requested that an increased amount of time be spent on traditional education. Further, it was suggested that cross-cultural education be taught as a subject. The introduction of vernacular classes and the inclusion of extra-curricular activities that promoted culture and cultural identity were also highlighted.

Conclusion

The overwhelming response of the trainees was that this course had empowered them, particularly in the college environment. The recognition and affirmation of their own cultures could only be described as 'joyous'. Culture in education became a celebration. Looking back on fifteen or sixteen years of schooling, trainees expressed the view that they had been 'culturally deprived' in their schooling. The college experience enabled them to see that culture could and should form an intrinsic part of education. In addition, the notion of sharing one's cultural identity and respecting the cultural identity of the other, helped trainees to overcome the feeling that one's culture was to be a hidden fragment of one's life, only aired in private, on special occasions, or as a quaint cultural event for tourist consumption.

Once in the field, teachers accepted the challenge of maintaining their cultural identity personally within the school and in the society at large. Enabling students within the schools to uphold their own cultural identity was more difficult because of the strong insistence by senior teachers and administrators that the primary purpose of schooling was to promote academic learning. Because a school's

worth and that of its staff is largely measured by the examination success of its students, cultural activities are not generally regarded as within the province of a school's responsibilities. If included, they would be seen as taking over already limited academic time. However, teachers in rural communities do have a significant opportunity to promote culture out of school time, largely because they are regarded as leaders and mentors in village communities. In urban centres the cultural decay is greater, and there is opportunity for the school or its teachers to counteract it.

This case study shows that teacher training is an important avenue for promoting and affirming cultural identity through education. In the context of Fiji, teacher trainees come from culturally different backgrounds and will return after graduation to teach in schools where their cultures are represented. Although the Fijian education system leans strongly towards Western knowledge and its modes of transmission, teachers who are sure of their own cultural identity and are motivated to affirm the cultural identity of others can make a difference. As a starting point, the Fiji College of Advanced Education is attempting through its core education courses to take on this role. In this way the indigenous Fijian culture and that of the Indo-Fijian Fijian people can be recognized and affirmed. Perhaps its impact is as yet small, but with appropriate nurturing it will grow.

Where to now?

On a global scale, the survival of small cultures does have a sense of urgency. Both small cultures and transplanted cultures face extinction through homogenization. It is crucial now, in the face of intensive social change and technological development, that formal education addresses this issue of cultural survival.

Children who live in cultural situations where grandparents, parents, community elders and other relatives are able to pass on what is culturally significant are decreasing. Formal educators at every level will have to shoulder this important responsibility if cultural development is to continue. Fiji's schools, colleges and the university can be important agents of cultural transmission.

This case study has shown that a local teacher's training college can use education for cultural ends. In so doing, it has made a small contribution towards improving the well-being and strengthening the cultural identity of both the Fijian and Fiji Indian people. It is hoped that a ripple effect has been set in motion.

Yalomatua, spiritual wisdom in the Fijian context, should not be lost in the change. Artefacts and behaviours may change with the times, but the intrinsic underlying values of a culture, if destroyed or changed to conform to 'the other', sound the death knell of that particular culture. Perhaps by the year 2000 and beyond, Fijian educators will re-affirm the importance of *yalomatua*, of 'preserving the deep values and history of the culture thus maintaining a clear sense of personal and cultural identity' (Nabobo, 1994, p. 7).

It is evident that for the island nation of Fiji to survive and progress in an increasingly competitive world, the strong roots and deep-seated values of their

peoples must be recognized and affirmed. The best way to achieve this goal is through the school system. Appropriately trained teachers using culturally sensitive curricula can be the fulcrum for a well-rounded cultural education for succeeding generations of Fijian and Indo-Fijian young people.

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LEARNING AND SCHOOLING OF BASARWA (BUSHMEN) CHILDREN IN BOTSWANA

Pat Pridmore

Introduction

This paper explores the influence of culture on learning in a settlement school for Basarwa (Bushmen) children. The settlement school is located in Ghanzi District in Western Botswana where most Basarwa are Nharo or G/wi. The Nharo are indigenous to Ghanzi District but have been squatters or labourers since Boers and Batswana moved into the area at the end of the last century and set up cattle farms. The G/wi are indigenous to the Central Kalahari but, after their lands were designated an official game reserve, the government began to move them into settlements around the edge of the reserve. The Basarwa in the settlement have not yet settled into peasant farming and are still highly mobile.

Background on Botswana

Botswana is a large (582,000 square kilometres) landlocked country in southern Africa. Roughly half of its very small population (1.3 million in 1991) live in crowded urban areas with the other half living in the sparsely populated rural areas. Since independence from British rule in 1966, the economy has enjoyed one of the highest rates of growth in sub-Saharan Africa. Expansion in the area of formal schooling has been rapid and 85% of primary school-age children now attend

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school. However, over half of all households are living in poverty, and lack food and economic security. Droughts are frequent and malnutrition has only been reduced in recent years by extensive drought relief feeding and employment interventions.

The name Batswana (singular Motswana) is used in this paper to refer to the black Tswana and other related Bantu tribes which comprise the majority of the population of Botswana. These peoples speak the national language called Setswana. There is also a significant minority of about 30,000 Bushmen known as the Basarwa (singular Mosarwa) who are also ethnically inter-related and speak a collection of 'click' languages called Sesarwa. The official language of Botswana is English.

PROLONGED SUBJUGATION

Serious questions have recently been raised concerning Basarwa human rights. Although Basarwa are generally recognized as the indigenous peoples of Botswana, they lack legal rights to land ownership and access to water sources. The prolonged marginalization and subjugation of Basarwa is recognized as a major barrier to their development and they are becoming increasingly impoverished (Mogwe, 1992). A master/serf relationship is still reflected in the attitude of the Ghanzi cattle-owners towards Basarwa labourers and in the attitude of Basarwa to participating in their own development (Campbell, Main & Associates, 1991). However, Barnard (1992) contends that the labourers have retained much of their traditional culture because they comprise the majority population in the area.

The Botswana government refuses to acknowledge Basarwa as indigenous peoples. The government uses the name Remote Area Dwellers (RADs) to group Basarwa together with the few Batswana who share their poor economic situation and location but are culturally distinct. This has been seen as a political strategy to acculturate Basarwa and more easily assimilate them into Batswana society (Saugestad, 1993). Until recently Basarwa have been politically silent and there is a general consensus in the literature that their continued existence as a distinct cultural group will largely depend on their ability to mobilize themselves on a common platform and argue for increased self-determination (Mogalakwe, 1986, Campbell, Main & Associates, 1991; Barnard, 1992).

Within each Bushmen group the largest social unit is the band. Bands practise a type of 'primitive communism' which aims to promote the survival of the band. Bands are both open and egalitarian communities in which neither men nor women are exploited and among which members may freely migrate. Within each band, Bushmen live in family groups which are usually inter-related. Most importantly, all Bushmen groups highly value the establishment and maintenance of harmonious relationships in their social order. The politico-economic framework involves political action being taken by consensus, a system of universal kinship

with social equality, individual and collective ownership of different types of property. (Barnard, 1992, p. 44)

TRADITIONAL PATTERNS OF LEARNING/ TEACHING

The Basarwa enjoy a rich cultural tradition of play and adults teach young children using traditional myths, legends, games, songs and dances. Children learn within the family unit and the playgroup by watching and doing' (Barnard, 1992; Silberbauer, 1981). The playgroup consists of children from about three to six years of age, and much of the children's play is imitation of the elders' daily activities. The knowledge, training and socialization of the child in the playgroup thereby reinforces that which is received from parents in the household. Basarwa are well known both for their tolerant attitude towards their children and for the freedom children enjoy in childhood. The egalitarian nature of Basarwa society fosters co-operation rather than competition between sexes and age groups, and children do not play team games in which an individual or group wins. High value is accorded to harmony and complementarity, and informal singing and dancing make an important contribution to their social and spiritual well-being (Marshall, 1976; Barnard, 1992).

Parental authority is kindly and reasonable (Silberbauer, 1981). Neither parent is especially dominant. Children learn to respect and obey their parents. Anything more than symbolic punishment of children for disobedience is considered to be inappropriate and unacceptable. Older siblings care for and teach younger siblings both within the family unit and playgroup. Same sex siblings enjoy a close relationship of trust and affection. Girls learn many of their roles from their mothers, and consequently spend more time with them than do boys. Brothers develop more emotional independence in the playgroup because fathers are often absent on hunting or other trips. Unlike most developing societies in which children and youths make a substantial contribution to the economy, Basarwa children are not expected to take any serious responsibility for hunting or gathering before their mid-teens.

Adults also teach children about the nature of the Basarwa universe. This universe is inhabited by a greater God, a lesser God, their wives and children (humans and other large mammals) and the spirits of the dead. The will of the greater God is paramount, and all creatures must fend for themselves within the constraints he ordained. Although the Gods are believed to direct the action of pathological agents in some cases, most illness is seen as a random occurrence in which several factors, some beyond human knowledge, combine in a particular pattern of misfortune. Because there is no notion of sorcery, it is not seen as a cause of ill health in contrast to traditional Batswana belief systems. However, medicine dances are important community rituals through which sickness is removed from the body. Basarwa are afraid of the spirits because they visit the living. There is no sense of lineage and (unlike the Batswana) they not do not identify closely with their ancestors. According to Barnard (1992) Basarwa believe that tilling the soil angers the Greater God.

DIRECTIONS OF CHANGE

Researchers have noted a gradual breakdown of traditional Basarwa social organization. Barnard (1992, p. 53) reports that amongst those who have become relatively sedentary, children travel further from their homes and adults spend less time with their children. When seasonal migration ceases, women tend to stay at home more while men are more likely to stay away from home, even if only looking after herds nearby. Mogalakwe (1986) found that Ghanzi farmers increasingly used child labour on the cattle-posts. These social changes are indicative of the gradual assimilation of Basarwa into the patriarchal Batswana society where children have domestic responsibilities starting at an earlier age.

New ideas about health are being assimilated alongside traditional belief systems as a result of interaction with Western medicine provided by government health posts. The use of these services are low, and Basarwa complain that health staff cannot speak Sesarwa and do not treat them respectfully (Mogwe, 1992). Traditional herbal medicines are preferred but are in short supply because roots and herbs cannot be collected away from their traditional lands. It is also illegal to practice traditional healing in Botswana without being officially certified. Few Basarwa possess these certificates. Excessive alcohol intake is a recognized health problem which, according to Mogwe (1992, p. 35), has its roots in poverty and marginalization.

The growth of an 'indigenous' movement within Botswana is beginning to impact on the direction of social and political change by increasing the capacity of the Basarwa for self-determination. Saugestad (1993, p. 41) makes the compelling argument that once indigenous organizations have been established and their leaders are able to negotiate with the government, far from threatening national unity and political stability, these organizations will contribute to the democratic process and actually make policy formulation and implementation easier.

Learning through schooling also has contributed to the acculturation of Basarwa. The government introduced free primary and secondary education in 1988, and while there are now primary day schools in some of the Ghanzi settlements there are no boarding facilities. Parents have difficulty feeding and caring for their children at the settlement schools because the land is not able to support the size of the resident population unless they make the unwelcome transition to subsistence farming. Parents therefore rely on being mobile in order to subsist. Lee (1984) found parents feared their children might be beaten or neglected if left with relatives. Although government transport returns children back to their homes for the school vacations, Basarwa children still lack effective access to schooling. This is reflected in low recruitment rates and high drop-out rates in settlement schools. Few Basarwa children reach secondary school.

Lack of parental trust in schooling is a major barrier to enrolment. Parents believe schooling is breaking down their social traditions. They also complain of insufficient money to buy the obligatory school uniforms and soap for washing them, lack of accommodation at schools, and transport difficulties between home

and school (Campbell, Main & Associates, 1991; Mogalakwe, 1986). Parents fear the occurrence of teenage pregnancies at the schools and believe Batswana men take advantage of their daughters because they do not respect Basarwa people. Children also drop out of school because corporal punishment is frequently used for reasons which they deem to be unjustified, such as for not knowing Setswana. Basarwa children are greatly disadvantaged because the language of instruction in schools is Setswana and young children do not know this language (Mogwe, 1992).

A field study of learning for health

The Alma-Ata Health Declaration (World Health Organization, 1978) was the milestone in health development thinking. It accorded a heavy responsibility to health education as the 'key' to implementing primary health care. Ten years on, a major review concluded that progress towards the goal of 'Health for all' had been slow, and that efforts had been hindered by the lack of health educators who knew how to work together with families and communities to improve health (WHO, 1988). The approach to health education known as Child-to-Child advocates involving children as health educators in promoting (as well as receiving) health education. Child-to-Child rests on three basic assumptions: (i) that primary education becomes more effective if it is linked to things that matter both to children and to their families and communities; (ii) that education in school and out of school should be linked as closely as possible; (iii) that children have the will, the skill and the motivation to help each other and can be trusted to do so (Hawes & Page, 1988).

It has been recognized however, that existing evaluation data on programmes using the Child-to-Child approach need to be strengthened to provide evidence of its effectiveness and increase understanding of the complex processes which underpin successful implementation (Child-to-Child Trust, 1994). School-based studies are especially needed as the primary school is currently accorded a key role in development as the arena in which health and education can meet and strive together to achieve their inseparable goals of 'Health for all' and 'Education for all'. In the absence of any other data on which to evaluate the effectiveness of children as health educators within the Child-to-Child 'Little Teacher' Programme in Botswana, a field study was conducted between March 1992 and September 1993. The field study also aimed to increase understanding of Child-to-Child Programmes by exploring the processes by which children are changing their behaviour and the process by which education affects both the children and their families. Cultural issues are central to the study as they impact on the beliefs and attitudes which inform learning for health.

The settlement school involved in the study was situated in Ghanzi District, western Botswana, where about forty mud or block houses, a shop and a health facility were clustered together in the otherwise featureless semi-desert. A borehole provided water but there was no electricity. All the school teachers who had been

deployed by the Ministry of Education were Batswana, and for those unaccompanied by their families, the hardship of separation was compounded by isolation and poor infrastructure. The social and economic disparity between Basarwa and Batswana was observed clearly in the different standards of clothing and housing between children and teachers. The school teachers lived in block-built bungalows and the Basarwa in mud 'rondavels'.

At the time of the study in 1992, ninety-one children were registered in the school. There were also twelve pre-school children attending for the Child-to-Child 'Little Teacher' Programme. The deputy head confirmed that the school population was highly mobile, especially since the government's drought relief feeding programme had finished. Some school children lived with their parents in the settlement but many were staying with relatives during term time and using the government transport to travel between school and home for the vacations.

A wall chart in the head teacher's office displayed a separate record of RAD children. As only fifteen children in the school were not RADs and all of these had parents teaching in the school or working in the health facility, this public record seemed unnecessarily divisive. The wall chart also revealed a dramatic reduction in enrolment for the higher standards, especially for boys. This indicated that girls were achieving greater access to the benefits of schooling than boys, and endorsed the findings of other researchers that women are grasping educational opportunities more than men (Campbell, Main & Associates, 1991). This has important implications for the survival of the Basarwa as there is much evidence to show infant mortality rates are closely related to maternal education. However, women may find it more difficult than men to enter the political arena and negotiate for the rights of their people to greater self-determination within the strongly patriarchal Batswana society.

THE INTERVENTION

The field study in the settlement school was an extension of a research programme in rural schools for Batswana children (Pridmore, 1996). The broader research programme involved implementing and evaluating a controlled experiment to assess the effectiveness of primary school children in the transfer of health messages to pre-school children within the established Child-to-Child 'Little Teacher' Programme in the schools. It also aimed to identify factors which enabled or inhibited the effectiveness of children as health educators. By extending the study to include the settlement school it was possible to explore the influence of culture on the ability of the school children to communicate the health messages.

The school-teacher responsible for the 'Little Teacher' Programme in the settlement school introduced four new health topics into the curriculum for primary school children. She then supervised them whilst they passed on these messages to the pre-school children using active teaching methods. The pre-school children were tested before and after the intervention to assess learning and the primary school children were tested before and after they taught the pre-school children to

assess how much they learned from performing their role as 'Little Teachers'. The teaching and testing were conducted in the official medium of instruction, Setswana. None of the teachers could speak Sesarwa.

The knowledge test data were very difficult to interpret, and we must bear in mind that there were language, cultural and social barriers between the children and their teachers. In this context neither primary school children nor pre-school children were able to learn the health messages taught during the intervention. In contrast both primary school children and pre-school children in the rural Batswana schools involved in the broader research study significantly improved their learning of the health messages. These findings confirm that children learn better when they share the same language, culture and social situation with their teachers.

CHILDREN'S DRAWING AND WRITING

An innovative method known as the 'draw and write technique' was used in the study to explore the children's beliefs about health. Pictorial data were collected from the eleven primary school children in the settlement school who were involved in the study and were between the ages of nine and ten. In the main study, pictorial data were also collected from 100 Batswana children aged nine to ten. First, children were asked to think about all the things they did or could do to make and keep themselves healthy. They were cautioned not to tell anyone else what they were thinking and then asked to draw as many of these things as they could on one side of a sheet of paper and to write what was happening in each of the pictures. Next, they were asked to think about all the things they did or could do to make themselves unhealthy, and to draw and write about them as before. Finally, they were asked to draw and write about the things that happened which made most people die. The school cook was able to translate these simple instructions into Sesarwa. Each response consisted of a picture and a written comment. These were analysed together to identify major categories and sub-categories before individual responses were classified.

What makes you healthy?

The responses of the eleven Basarwa children fell into four categories—food, exercise, medicine and hygiene. By contrast the responses of one hundred Batswana children fell into only one—food. This may reflect a broader system of beliefs about the causation of health and disease among Basarwa children. Five Basarwa children drew pictures of themselves involved in exercise whereas none of the Batswana children depicted exercise. Surprisingly, none of the children recorded sleeping, resting or keeping safe as causes of health (Table 1, Figure 1).

TABLE 1: Basarwa children's beliefs about what makes and keeps them healthy (n = 11)

Category	No. of children responding at least once
Food and drink labelled as 'good'	7
Exercise: playing, singing, dancing	5
Medicine	1
Hygiene: drinking clean water	1
bathing	1

FIGURE 1: Children's beliefs about what makes them healthy.



The majority of children (seven out of eleven) identified the unhealthy habits of drinking and smoking although fighting and accidents were also represented. Only one child identified disease and one child drew herself 'being hungry' (Table 2, Figure 2). In contrast, most of the Batswana children drew sugar and sweets. Children drew fewer pictures in response to this question than to the other two questions. This may have been because children found it more difficult to understand what was meant by being unhealthy.

Category	No. of children responding at least once
Unhealthy habits : drinking alcohol :	5
smoking tobacco	2
Violence: fighting (knives, axes, stones)	4
Accidents: snake-bite/fire	3
Infectious disease: scabies	1
Malnutrition - hunger	1

Four categories were identified; violence, accidents, wild animals and suicide. No diseases were recorded, which was puzzling as there was a high incidence of infectious childhood disease in the area. This may be caused by children remembering the more violent causes of death more than the common place, or because disease was seen as only one of many factors which ultimately resulted in death within their own understanding of the universe (Table 3, Figure 3). The same four categories were identified in the pictures from Batswana children but there were also many pictures of diseases and sorcery (witches and spirits).

Category	No. of children giving this category at least once
Violence: fighting	8
Accidents: (e.g. traffic, lightning, drowning)	5
Wild animals (snake)	1
Suicide (hanging)	1

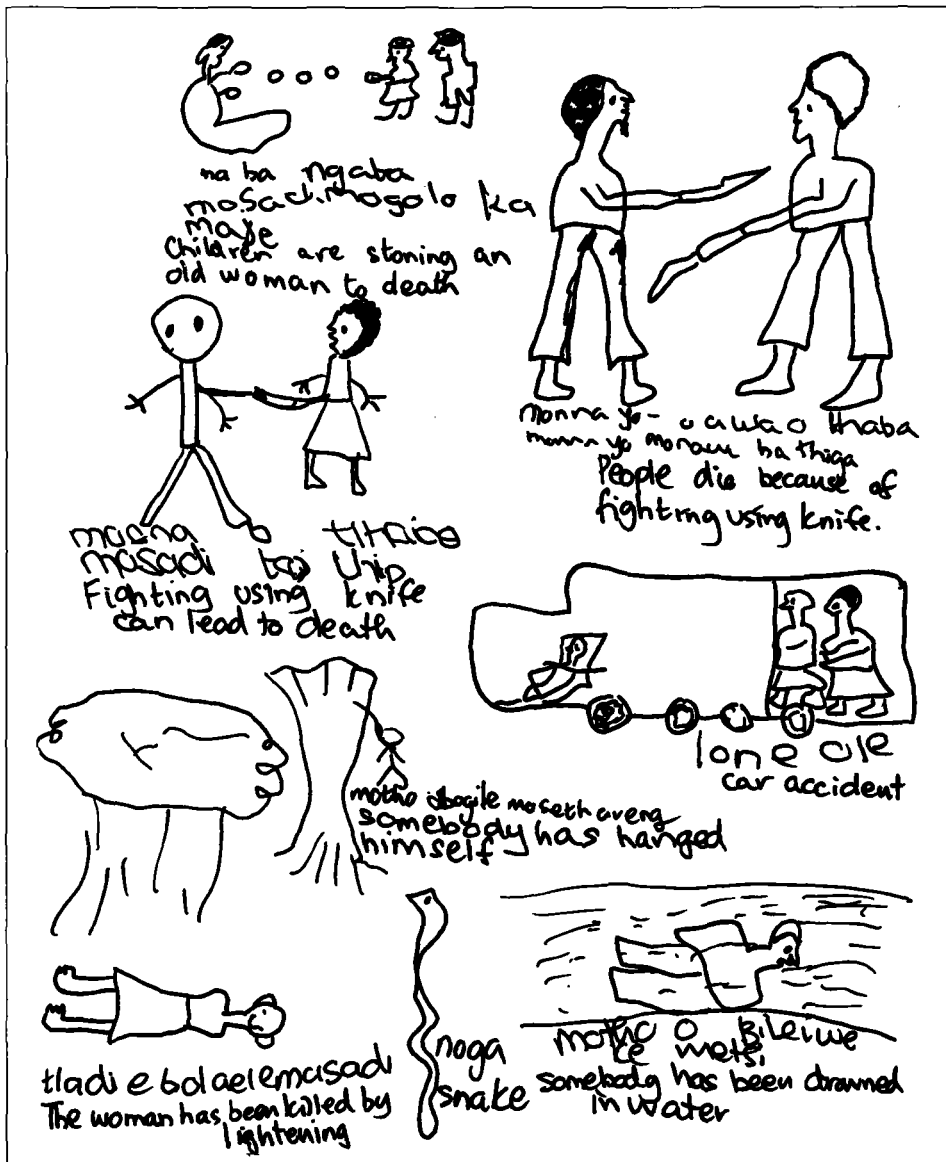
Children were observed playing in the school compound for two or three hours at a time without adult supervision. They did not become bored or disruptive and their play was creative and harmonious. Boys often played football with a compressed paper ball. They did not play in teams and there was no goal. Girls liked to stand or sit in a circle and to try to hit a girl in the centre of the circle with a paper

FIGURE 2: Children's beliefs about what makes them unhealthy.



ball before she could fill up a glass bottle with sand. To avoid being hit by the ball the girl in the centre leapt around with incredible agility. Children were also observed practising traditional Basarwa dances accompanied by clapping and singing. The dances were dramatic, required great agility and precision and included many of the patterns described by Marshall (1976, p. 313–62). The children were going to perform these dances at a cultural gathering in the district. This endorsed the notion of a cultural renewal in Botswana and indicated positive change to preserve Basarwa culture.

FIGURE 3: Children's beliefs about what most people die from.



Discussion

THE NEED FOR A NEW EDUCATIONAL MODEL

The experience gained in the settlement school highlighted the way in which Basarwa children were multiply disadvantaged. The failure of the education system to take account of the linguistic, cultural, social and economic barriers to learning for Basarwa children underpinned low enrolment rates and high drop-out

rates. These findings argue for a more relevant bilingual, multicultural model of schooling.

The most important finding was that young Basarwa children were educationally compromised because they did not speak Setswana, the language of instruction in the school. The language barrier was exacerbated by a Western model of education relying on language as the main vehicle for learning, and was a major cause of the Child-to-Child intervention programme failing to result in any measurable increase in learning. This corroborates the findings of other researchers (Mogwe, 1992; Kann, 1989), and raises serious questions about government's insistence on Setswana as the only medium of instruction, especially when Sesarwa speaking school teachers are not available to facilitate communication. It also highlights the importance of translation at all levels. Government policy is increasing inequality by undermining the effectiveness of schooling.

Social and cultural barriers to learning were also highlighted. Children cannot learn well if they are cold, hungry and inadequately cared for, or if what they are taught bears little resemblance to their own world view. Although everyone in the settlement experienced some hardship, the teachers and other Batswana in the settlement had access to better clothing, housing and transport than Basarwa. The cultural gap between school teachers and children prevented the teachers from playing their central role as a 'cultural bridge' to facilitate learning. It is significant that government policy does not acknowledge the distinct culture of Basarwa children at a time when educationalists are increasingly aware that what matters most in the learning situation is the relationship between the culture of the learner (or group of learners) and of the teacher (or the school). A lively debate within the Botswana Ministry of Education on ways of achieving 'Learning for all' has failed to address the central issue of whose culture is being transmitted. This failure endorses the Basarwa's own view that the government is using the education system to acculturate their children, and corroborates the findings of other researchers (Campbell, Main & Associates, 1991; Lee, 1984; Mogwe, 1992).

The traditional Western model of education in the school emphasized the importance of what was taught, rather than who was doing the teaching in situations where the content and language of delivery were largely unfamiliar to the learners. Learning was rule-oriented and unidirectional, competition was encouraged and learning outcomes were judged by examination results. This contrasted sharply with the traditional Basarwa model of learning/teaching where childhood learning in the family unit or playgroup was informal, non-competitive, task orientated and relatively free of rules. Children learned through experience and experimentation, or directly from elders. To increase the effectiveness of the curriculum, educators at all levels would need to be open and willing to gain an intimate knowledge of Basarwa culture and be able to use this knowledge to increase relevance and learning. This points to the immediate need to recruit and train Basarwa teachers.

The experience confirmed that schooling is essentially a process of acculturation, a fact which is well recognized by educationalists. Ideas and models of educa-

tion imposed by those outside the culture of the child can prejudice the culture which the child brings into the learning situation. It may therefore be suggested that the Botswana Ministry of Education is deliberately promoting the destruction of the cultural tradition and way of life of the Basarwa by encouraging their children to enter the formal 'Western' education system.

To be effective, health education must be informed by a sound understanding of traditional belief systems, because conflict between the children's own health beliefs and Western 'biomedical' conceptualizations of health can cause new ideas to be rejected. The draw-and-write technique proved to be a powerful method for exploring children's beliefs about health and data, and confirmed that Basarwa children had retained a unique world view which differed from that of Batswana children. The data showed that new ideas about disease have not yet been assimilated fully into traditional belief systems.

The pictures of non-competitive games, dancing and singing reflected the high value given by Basarwa to harmonious relationships and to the medicine dance which promotes psychological health and well-being. The pictures also endorsed the findings of other researchers that the Basarwa (unlike the Batswana) have no notion of sorcery and avoid making reference to the spirits of the dead (Barnard, 1992). Basarwa children are beginning to adapt their knowledge systems as a result of interaction with the dominant Batswana culture. For example, the pictures showed they were aware that alcohol and smoking were a health problem in their community. The frequent depictions of violent death may indicate that Basarwa children are shocked by what they see as alien to their own culture or may be indicative of social change and the gradual breakdown of traditional social organization.

THE NEED FOR EDUCATIONAL POLICY CHANGE

The present government policy is to develop Botswana as one united state of Batswana peoples. This does not recognize the unique culture of the Basarwa who want to simultaneously be part of the nation state and to maintain and develop their own culture. Their cause has recently been taken up by those outside their own culture who have encouraged them to form indigenous organizations, and take leadership roles so that their political voice can be heard against the process of acculturation. This paper supports the case for educational policy change on the grounds that current policy amounts to unofficial racial discrimination against the Basarwa and that recognition of their distinct culture could be viewed as an enhancement of cultural diversity and the cultural heritage of Botswana. This argument may be particularly effective in the current climate of cultural renewal in the country. There are signs that the Batswana are beginning to realize not only the need to preserve and promote their own culture, but also to recognize the rich contribution which Basarwa people have to offer.

A NEW EDUCATIONAL MODEL

The experience in the settlement school has serious implications for the provision of schooling for Basarwa children, and is suggestive of a new educational model to overcome the barriers to access and to learning. This model needs to seek a balance and consensus between Basarwa, Batswana and Western learning styles to enable Basarwa children to move into the wider society without sacrificing their own cultural identity. This would involve using more relevant, 'indigenous' pedagogy (in which watching and doing are the main vehicles for learning), adapting the present content so that it draws from experiences which are largely familiar and which emphasize the culture of family and community.

There are also implications for teacher training. Traditional teacher training tends to select young people and take them away from their communities for training. This runs the risk of alienating them culturally and encouraging them to devalue their own culture. It may be more appropriate to select older Basarwa men and women who already provide a relevant informal pedagogy to children in the playgroup and train them within their community. This strategy has been used successfully in primary health care programmes to train traditional birth attendants as community health workers.

The experience in the settlement school highlighted problems with the Child-to-Child 'Little Teacher' Programme. There is, however, considerable potential in the approach for promoting the learning of Basarwa children if it is adapted in a manner that is sensitive to their particular context. Child-to-Child advocates the use of active learning methods (song, dance, games, stories). These are part of traditional Basarwa pedagogy, and could be used to increase relevance and reaffirm their own knowledge systems and social organization. Child-to-Child could help children to think critically about their health problems. Child-to-Child has been shown to improve children's self-image and self-esteem, to develop leadership skills and to enable children to have a voice within their family and community. Older children could help younger siblings to learn Setswana and so ease their entry into government schools. Basarwa children would be in a good position to pass on health messages to their families and communities because of the egalitarian nature of their society. Child-to-Child could be used to build a bridge between home and school, and children and parent/guardians could become empowered, through consultation, to develop a new model of education.

Since the time of the field study in 1992 a more relevant model of pre-school education has been piloted in the settlement by an indigenous organization called 'Kuru'. The teacher is a Mosarwa member from the settlement and the aim is to teach elementary Setswana. The future is uncertain as the pre-school lacks government funding, children are still highly mobile and the settlement development committee does not yet have the capacity to mobilize the community to manage the school without external support.

This paper has illustrated the way in which learning and schooling are both value- and politically-loaded. The Basarwa are faced with a real dilemma. They

want to maintain their traditional way of life and collective identity and have good reason to be suspicious of the impact of Government schooling on their lives. Nevertheless, they recognize that the ability to read and write and to speak for themselves in Setswana is potentially empowering and could enable their children to become protagonists in defence of their own rights. As Lee (1984, p. 142) has observed, 'the ability to read and write has become an even more important skill than hunting and gathering in the struggle for survival.' The government is creating laws which infringe on their lives. Without education to enable them to interpret these laws and make appropriate responses, their future is bleak and they will continue to be assimilated into the bottom socio-economic level of the Batswana nation.

The school system is a barrier to the cultural development of Basarwa children because it does not provide a forum for Basarwa and Batswana cultures to meet on equal terms. The school is viewed an instrument of the state supplanting the traditional role of the band in educating its children which is underscored by lack of consultation between school and community over the curriculum. To promote the educational development of Basarwa children consultation needs to be an intercultural educational process of exchange between school and community which allows some selection of curriculum content and the type of teaching most suited for the children. True consultation must acknowledge the need to preserve the language and culture of the children and many writers have stressed that the curriculum must reflect an intimate understanding of the values and perceptions of the recipients if it is to be seen to be relevant to the learners (Aikman, 1994; Leach, 1994; Carr-Hill, 1994).

It is to be hoped that Basarwa will eventually gain a political voice and negotiate a more self-determined model of education. The continued growth of the indigenous movement and the use of innovative educational approaches like Child-to-Child can play an important role. Ultimately, however, the development of the indigenous movement will revolve around the issue of whose culture matters and whose pedagogy matters. This is a political debate and the Basarwa will need to develop the ability to speak with one voice and make that voice heard.

Conclusion

This article highlights the inadequacy of the current model of schooling delivered to Basarwa children in Botswana, and contends that their education should be re-evaluated from a cultural viewpoint. Children and teachers are enmeshed in a dynamic, cultural, social and political web, and there are serious language and cultural barriers to learning. These barriers underscore the need for a bilingual, multi-cultural model of education to affirm and strengthen the culture of the child. The high mobility of the Basarwa demands a flexible, less formal model of schooling and training of teachers from within the Basarwa culture. An innovative curriculum is needed, building on traditional Basarwa pedagogy and world view to develop skills needed to gain greater equity. The approach to health education

known as Child-to-Child has considerable potential for curriculum development. Until a more relevant educational model is available Basarwa children will continue to be disadvantaged.

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CONCEPTS OF LEARNING, KNOWLEDGE AND WISDOM IN TONGA, AND THEIR RELEVANCE TO MODERN EDUCATION

Konai Helu Thaman

In the tradition of contemporary Western discourse, I begin with definitions of culture and education, since my own socialization in a small Pacific island kingdom may have caused me to see things differently than most readers. For the purposes of this paper, I define culture as the way of life of a discrete group of people. It includes language together with an associated body of accumulated knowledge, understandings, skills, beliefs and values. I regard culture, therefore, as central to our understanding of human relationships, particularly cross-cultural relationships.

I define education as an introduction to worthwhile learning, and distinguish among formal, non-formal and informal education. Formal education is organized and institutionalized learning, such as that which occurs in schools and universities; non-formal education is organized but non-institutionalized learning; and informal education is unorganized and non-institutionalized learning. The first type of education was introduced to most of our islands in Oceania in the early part of the nineteenth century.

My definition of culture is inclusive of the education system of a people because, for most of the indigenous communities of Oceania, culture is something that is lived and continually demonstrated as a matter of behaviour and performance. Oceanic peoples—variously described by Western scholars as Melanesian, Polynesian or Micronesian—generally have cultural identities and world-views which emphasize place and their links to the *vanua/ fonua/ ples* (inadequately translated into English as ‘land’), as well as networks of exchange and/or reciprocal relationships.

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Although Oceania is characterized by cultural diversity, its people share common colonial histories and have suffered the same consequences of colonialism, whether it be French, British or American. Although colonial and imperial forces transformed many aspects of our cultures, some important aspects have persisted despite the imposition of foreign values, languages, religions and systems of education.

Schooling and cultural change

The introduction of formal education to Oceania last century meant the promotion, through the manifest as well as the hidden curriculum, of the dominant values and ideologies of European cultures (the United Kingdom and France in particular) and, more recently, of Australia, New Zealand and the United States. Until then, education had been largely informal, although there is evidence of non-formal education aimed at teaching specialized skills and knowledge such as those relating to warfare and navigation in the case of males, and various craft-related skills for females.

These non-formal and informal education processes were disrupted by the introduction of schooling, which was carried out first by European missionaries and later by colonial governments. In their quest to 'civilize' and convert our forefathers and foremothers, these foreigners provided orthographies for some of our languages and taught some of our people to read and write. More importantly however, the foreigners tried to teach them to reject those aspects of Pacific cultures which they regarded as detrimental to their purposes, whether motivated by religious faith or economic gain. Thus, important aspects of Pacific cultural traditions, including those relating to education, have at best been devalued and at worst destroyed. Goldsmith (1993, p. 285) is harsh in his description of the situation:

The colonial powers sought to destroy the cultural patterns of traditional societies largely because many of the essential features prevented traditional people from subordinating social, ecological and spiritual imperatives to the short-term economic ends served by participation on the colonial economy. There is no better way of destroying a society than by undermining its educational system.

The legacy of colonial education remains. Contemporary education, from primary to tertiary, continues to be mainly concerned with training the peoples of Oceania for a career in the urban industrial sector or, more generally, in the cash economy. It is not concerned with cultural development. This has several consequences. One is urban drift: primary school-leavers desert the villages for the towns, secondary school-leavers move to the capital cities to find work, and graduates from tertiary institutions choose to use their new-found skills in metropolitan countries. Instead of providing our societies with a means of cultural renewal, formal education is providing them with a means of assuring their cultural demise.

This is because, during the past twenty years, formal education has increasingly come to be seen by the leaders of Oceania as the base for modern develop-

ment and the key to success in the global economy. Indigenous Pacific Island cultures are perceived as having little contribution to make towards the achievement of economic goals. Only those elements of our cultures which are regarded as potentially important for economic development are valued. These include, for example, certain types of traditional rituals, ceremonies, modes of dress, crafts and performing arts that are used to promote tourism. The result is that an increasing number of Pacific Island people are unable to renew themselves culturally, and therefore are doomed to become isolated and alienated in the towns and cities of Oceania, as well as in the foreign countries to which many have migrated.

Schooling and Tongan notions of education

There are also less visible signs of the impact of formal education on Pacific Island societies. One is the way schooling has affected our notions of what education and the educated person are, which in turn can affect what we consider worthwhile to learn and to teach. Later I shall illustrate this with reference to the evolution of three Tongan educational ideas: namely *ako*, *'ilo* and *poto*. But first, a brief look at schooling itself.

We know that throughout history, societies have differed in terms of what they consider to be worthwhile to transmit to their young. Most societies, however, share the view that education should aim at ensuring 'the cultural continuation of the group, race or nation, transmitting knowledge, skills and values from the mature to the immature either informally through the social milieu or formally through the school' (Gutek, 1972, p. 11). These worthwhile patterns and values of a culture usually are reflected in its language and especially in its meaning.

In Tonga, as in most parts of Oceania, schools developed not, as Shipman (1971) has suggested, because the social organization had become too complex, but rather because foreign missionaries wanted to convert Tongans to Christianity and 'civilize' them. Gradually, as the missions and new-styled (colonial) governments required clerks, school teachers, nurses and other types of workers, the school came to serve the function of mobilizing labour.

As in most indigenous Pacific Island societies, early Tongan education was informal (i.e. unorganized, worthwhile learning) and aimed at the continuation of the social order and the maintenance of the status quo—what Shipman (1971, p. 70) calls 'cultural continuity'. For over three thousand years, this type of education prepared Tongans to fit their societal roles and to keep their desires and knowledge within the limit of their social positions and island environments. Where learning was organized (as in the case of the education of some members of the aristocracy), the values taught did not conflict with those of the larger society; in fact, they reflected the nature of the society. Persons were instructed in the specific knowledge and skills of acceptable behaviour, as well as in the practical skills needed for survival and the continuation of the culture (Cummins, 1977).

This largely informal and non-formal education was provided within the *'api* (household) and to some extent within the wider community of kinsfolk.

Education was effected in a variety of ways, but most of all through myths, legends, dance, poetry, song, proverbs and certain rituals such as the *'inasi* (the annual presentation of the 'first fruits' to the *Tu'i Tonga*, or divine leader). But in the early part of last century, this pragmatic approach to worthwhile learning had to be widened in order to accommodate the new European knowledge and the new approaches to acquiring that knowledge—predominantly gained from books and the institution of the school.

In school, education was associated with learning those things which the missionaries deemed important in their perceptions of a good, pious and economically productive life. The emphasis of learning shifted from the 'here and now' and the practical, to the 'there and then' and the abstract. As can be expected, there was a basic conflict between the values promoted by the school and those of the pupils' culture. This conflict continues to exist among a large proportion of students, not only in Tonga, but also in other parts of the Pacific (for example, see Ninnes, 1995), creating what Little (1990, p. 4) calls the 'learning gap'.

The Tongan cultural values which underpinned Tongan education included emphases on: the spiritual and supernatural; formal conformity; rank and authority; kinship and interpersonal relationships; *'ofa* (compassion); and restrained behaviour (Thaman, 1988). Such values were important in maintaining and continuing a culture which was group-oriented rather than individual-oriented, as reflected in Tongan notions of *ako*, *'ilo* and *poto*.

Analyzing Tongan educational ideas

In the tradition of Western education, it generally is accepted that the primary aim of analysis is clarification. My own analysis of Tongan educational concepts involved four simple tasks: examining the word in which the idea is expressed; examining how the word is used in different contexts; determining whether the meaning is educational or non-educational (i.e., pertaining to worthwhile education or not); and determining what the meaning implies or presupposes.

The terms *ako*, *'ilo* and *poto* and their derivatives have been used widely within the context of Tongan education. Accepting that there was no single standard use of words in ordinary language and that some philosophers tend to stress certain uses rather than others (Langford, 1973), I tried to identify as many types of uses as possible for each term (Thaman, 1988).

A K O

The earliest reference to the meaning of *'aco* (*sic*) is by Martin in 1827. He attributed to it the meaning 'to teach, or to learn' (Martin, 1827, p. ix). *Ako* also was a term used to denote teaching and learning in a society where everyone was expected to perform certain roles in accordance with various predetermined hierarchies which were expressed through a complicated network based largely on kinship relationships. A person learned mainly through observing, listening to and

imitating others. When the need arose, specific skills and knowledge (for example, knowledge of navigation and warfare) were taught by those who were responsible for imparting such knowledge.

Current usages of the term *ako* provide some clues as to the evolution of the concept, as well as how social and cultural changes have affected and transformed its meaning. Today, *ako* is variously used to mean: to learn, the learning process, instruction, training, to study, to practise, schooling, to receive instruction and the formal education system. Figure 1 gives several examples.

FIGURE 1. Examples of the use of the word *ako*.

TO LEARN:

Na'a ke ako ke faka'uli 'i fe? (Where did you learn to drive?)

'Ofa keke ako mei a Mele ha anga 'oku sai. (Hopefully you will learn some manners from Mele.)

INSTRUCTION:

fa'ahinga ako ki he toutai (fisheries)

fa'ahinga ako ki he mo'ui (health education)

fa'ahinga ako ki he sino (human physiology)

TRAINING:

'Oku ako neesi 'a Ana. (Ana is training to be a nurse.)

'Oku ako faiako 'a Seini. (Seini is training to be a teacher.)

'Oku ako taipe 'a Sione. (Sione is training to be a typist.)

TO STUDY:

Na'a ke ako maiohi? (Did you study hard?)

'Oku 'ikai teu fie ako au. (I don't want to study.)

TO LEARN REPEATEDLY OR TO PRACTICE:

'Oku nau ako hiva. (They are having a singing practice.)

'Te ke 'alu ki he ako pasiketipolo? (Are you going to basketball practice?)

Tau o ki he ako faiva? (Let's go to dancing practice?)

SCHOOL:

Na'a ke 'i he ako' ane afi? (Were you at school yesterday?)

'Oku ou sai'ia he ako'. (I like school.)

'E fokotu'u e ako' 'apongipongi. (School starts tomorrow.)

THE FORMAL EDUCATION SYSTEM:

'Oku holo 'a e ako'. (The education system is getting worse.)

'Oku lahi e liliu 'a e ako' he ngahi 'aho ni. (There are many changes in education these days.)

'Oku mahu'inga 'a e ako'. (Education is important.)

A derivative of *ako*, *faiako*, is used to refer to a teacher or instructor. (The prefix *fai* is commonly used to denote doing something or making it happen. In this sense, *faiako* implies 'making learning' or bringing about learning.) *Faiako* is closely associated with formal education, since in informal contexts people learn largely through observation, listening and imitating those who possess the desired skills and knowledge. Today, the term *kau faiako* is used almost exclusively to refer to school teachers.

'ILO

According to Koskinen (1968), *'ilo* was used widely among Polynesian peoples to denote what he called 'seeing'. In Tonga, *'ilo* is used in a variety of ways. As a verb it means to find, to recognize, to discover, to know, to experience and to understand. As a noun it refers to information about something or someone, as well as to different types of knowledge and skills. In Tongan, *'ilo* refers both to the process of knowing and to the knowledge itself.

Koskinen also suggests that *'ilo* may be obtained naturally or through active searching, studying or learning. Tongans distinguish between *'ilo* which is public and passed on from adults to young people through observation and imitation and *'ilo* which is more restrictive and personal. For someone to have *'ilo* implies that she or he has gone through a prior stage of either searching, learning or studying. Hence, *'ilo* may be said to be the end result of *ako* (learning).

Educational uses of 'ilo

'Ilo is used in a variety of ways, including to see, to find, to recognize, to find out, to discover, to know, to experience, to be well informed and to understand. It also refers to knowledge itself and may be used as an adverb meaning knowingly. Figure 2 presents uses of the word *'ilo*.

FIGURE 2. Examples of the use of the word *'ilo*.

TO FIND (AS A RESULT OF A SEARCH):

Na'a ke 'ilo a Mele 'i fe? (Where did you find Mele?)

Na'a ne sio ki a Mele 'i kolo. (She saw Mele in town.)

TO RECOGNIZE SOMEONE OR SOMETHING:

Na'e 'ilo koe e Atu? (Did Atu recognize you?)

Na'e 'ikai keu mei 'ilo atu koe. (I almost did not recognize you.)

TO FIND OUT:

Na'a ke 'ilo 'a e ola e sivi? (Did you find out the results of the examination?)

Na'e 'ikai teu 'ilo kuo mate 'a Mosese. (I did not find out about Mosese's death.)

TO DISCOVER:

Ko Tasimani ko e papalangi na'a ne fuofua 'ilo 'a Tonga ni. (Tasman was the first European to discover Tonga.)

Na'e 'ilo 'e Sela ha koloa mahu'inga. (Sela discovered a treasure.)

TO KNOW:

'Oku 'ilo 'e Tevita 'a e ngahi me'a lahi. (Tevita knows a lot.)

'Na e 'ikai teu 'ilo pe ko e toko fiha na'e folau. (I did not know how many people sailed.)

TO BE WELL-INFORMED OR KNOWLEDGEABLE:

Ko e tokotaha 'ilo me'a 'a Paula. (Paula is a knowledgeable person.)

Ko e faiako 'ilo lahi 'a Seini. (Seini is a well-informed teacher.)

KNOWLEDGE OR INFORMATION:

'Ilo fakatufunga (knowledge of carpentry)

'Ilo fakatukufakaholo (traditional knowledge)

'Ilo fakatohitapu (biblical knowledge)

Derivatives of 'ilo: Various derivatives of 'ilo such as *faka'ilo*, *faka'iloa* and *faka'ilo'ilo* are also commonly used in educational contexts. *Faka'ilo* is a causative form which means 'to make known or to inform'. For example, when news of a death is made known to someone, we say, 'Na 'e faka'ilo e putu ki a me'a . . . (So and so was informed of the death of . . .) *Faka'ilo'ilo* means to learn gradually or slowly, or to become accustomed to someone or something: *Na'e faka'ilo 'a Mele ki he 'alu po'uli* (Melo became accustomed to going out at night).

The above examples are considered educational because they are associated with learning. They reflect the fact that 'ilo denotes the understanding of something because it expresses different aspects of knowing, as well as the knowledge and activities that help learning (*ako*) because it is linked both to finding and seeing. In the context of knowing, 'ilo is not something that occurs automatically. One who has 'ilo has special insight into something which implies learning, studying and understanding. Thus, we may conclude that *ako* is an important and necessary condition of 'ilo.

POTO

Poto is the fundamental concept of Tongan education (McCrae, 1986; Thaman, 1988). However, the pre-contact meaning of *poto* simply denoted cleverness and skill. Churchward (1959, p. 125), the author of the most comprehensive Tongan-English dictionary, defined *poto* as 'to be clever, skilful; to understand what to do and be able to do it'. Another linguist, Schneider (1977, p. 60), more or less agrees. Among his suggestions are intelligent, knowledgeable, skilful, clever and wise. Like most terms, *poto* is used by Tongans in a variety of ways and contexts. Figure 3 demonstrates uses of the word *poto*.

A derivative of *poto* is *fiepoto*, a rather derogatory term which denotes pretending to be *poto* or imagining oneself to be clever—and therefore being presumptuous or conceited.

FIGURE 3: Examples of uses of the word *poto*.

TO HAVE ENOUGH SENSE OR INTELLIGENCE

Pebeange mai 'e poto 'a Suli 'o fou mai heni. (Hopefully, Suli would have enough sense to come by here.)

TO LEARN A LESSON:

Pea 'ofa keke poto a heni 'o tuku 'a e lele lahi. (Hopefully, you have learned a lesson and stop speeding.)

TO BE SKILFUL OR GOOD AT SOMETHING:

'Oku poto 'a Manu he lalanga. (Manu is good at weaving.)

'Oku poto 'a Tina he faka'uli. (Tina is a good driver.)

TO BE CLEVER AND SUCCESSFUL IN SCHOOL:

Ko e tamasi'i poto 'a Pita. (Pita is a clever boy.)

In relation to educational uses, various types of *poto* situations can be identified. '*Atamai poto* denotes a good mind or intelligence, '*nima poto* (clever hands) denotes good motor/manual skills and *anga poto* implies appropriate/acceptable behaviour. The modern Tongan poet, Mamae'apoto, used *poto* in the sense of utilizing one's knowledge and skills to survive in difficult situations such as when one meets an enemy (Colcott, 1928, p. 125). In such a situation, one had to know what to do and be able to do it well; in short, one had to be *poto*.

Relationship between *ako*, '*ilo* and *poto*

Poto, in the context of Tongan education (*ako*) may be achieved through the appropriate use of '*ilo*. Therefore, *poto* may be defined as the positive application of '*ilo* (knowledge and understanding), and the 'educated person' (*tokotaha poto*) as the one who applies '*ilo* with positive and successful results. Kavaliku (1966, p. 13) refers to the educated person, the one who is *poto*, as 'a man (*sic*) of wisdom, an ideal, a thing of value'. Someone who is not *poto* is *vale*—one who does not apply '*ilo* positively. '*Ilo* therefore, is a precondition of *poto* but it is through the positive application of '*ilo* that one becomes *poto*.

For over one hundred years now, the school has come to be closely associated with all three concepts. School has been regarded as a major source of '*ilo*. Children are sent to school in order to become *poto*. To become *poto* one had to be able to read, write and do simple arithmetic. By the turn of the century, those who had the new knowledge, as judged through passing school examinations, were considered *poto* and were referred to as *kau poto*—meaning 'the educated ones'. We may therefore conclude that *poto* was reconceptualized in order to include formal education.

However, this reconceptualization of *poto* did not go unnoticed. In 1931, for instance, Havea, a well-known schoolmaster and a *tangata poto* himself, compared the old and the new conception of *poto* in a poem, reminding his readers of the traditional basis of *poto* which was rooted in the value of maintaining good relations and helping one another, and not in attending school (Havea, 1931, p. 3).

In a recent study of the perceptions of Tongan teachers, I found that the majority of teachers interviewed considered school a place where children can become *poto*. But in clarifying their ideas, they emphasized the need for students to use their school knowledge ('*ilo*) for the welfare of others and not to be selfish with their education. 'What is the use of your degree, if you are only looking after yourself?' (Tu'itupou, 1981). Thus, modern education is valued in Tonga, not so much because it is good in itself, but because it helps people find jobs which in turn enables people to fulfil their social obligations to their respective groups—whether these be family, community, school, church or country. Such a utilitarian view of education is characteristic of traditional Tongan education, and is reflected in the three concepts discussed above.

What are the implications of these trends for Tongan culture and modern education in Tonga? For me, it means that all is not lost with regard to ensuring

that children acquire useful Tongan cultural knowledge in school in order to survive in our rapidly modernizing world. This is based on the assumption that there are aspects of indigenous education which children will need for survival in the next century. Tongan teachers will emphasize these within the constraints of the school because of their cultural values. For such an 'educational synthesis' to be successful, educators need to critically analyze those values that underpin traditional education as well as Western, institutionalized education.

This is beginning to happen within the Pacific region. Already some Pacific Island educators, as well as educators in metropolitan countries, are questioning the values underpinning modern education and 'development'. Some see the dominant paradigm of scientific materialism as problematic in an age of global environmental concerns, shrinking resources, widespread social breakdown and political chaos. Some are looking for alternative world-views. The indigenous Pacific Island view of the world is one in which people are an integral part of the environment, not the masters of it. Beare and Slaughter (1994, p. 59–61) suggest that the scientific-industrial view of the world (which has dominated education in the Western world for the past 300 years) is now questionable even for Western societies. Unfortunately, our schools and universities continue to promote this scientific-industrial view, a view characterized by reductionism, positivism, materialism, objectivity, rationality, quantitative analysis and anti-enchantment (Harmann, 1988, p. 29–33). In this kind of education, indigenous and holistic views yield to the reductionist view in which knowledge has to be broken down into bits and pieces, and only people with specialized knowledge are permitted to teach it in schools (Beare & Slaughter, 1994). For over one hundred years, we too have promoted (or at least accepted) this view of education, one that is diametrically opposed to our traditional notions of *ako*, *'ilo* and *poto*: a view that is characterized by an overemphasis on individual gain and competition, and not on maintaining good relationships; a view where the status of schools and teachers is based on the number of students who pass examinations irrespective of what is being learned or how their learning relates to the culture of which they are a part.

The irony is that although most teachers in Tonga perceive their role in a traditional sense—that of nurturing Tongan values and appropriate Tongan behaviour (Thaman, 1988)—many of them do not appreciate the fact that the scientific-industrial paradigm and its current manifestations (the rapidly expanding market economy, its associated growth-mania and consumerism) are really destructive and exploitative of their culture and its values. Although many may be aware of the impact of the market economy on their island ecosystems, its impact on themselves (as individuals and as groups within the society), particularly on their labour, their minds and their cultural relationships, are less understood and not well documented.

Why? Because those of us who are best placed to confront the issues are ourselves too cocooned in our Western scientific and materialistic education to be aware of what education is doing to our island environment in general and our cultural heritage in particular. In my view, the apparent degradation and desecration of many Pacific cul-

tures and languages is due in large measure to the education systems we have inherited. The urgency with which we in the Pacific must tackle and critically analyze the knowledge which schools are imparting to our children cannot be overemphasized.

Conclusion

So what can be done to solve this educational dilemma, a dilemma which seems to be compromising our chance to evolve an education that would best serve our island societies in a rapidly changing world? It is my belief that Pacific Island educators (and I include myself in this category) must begin by critically examining those Western social-psychological theories and philosophies which have influenced our work in schools and institutions of higher learning for so long. Such theories include those which rely on a biological model of interaction and a view of personhood comprising a distinct, physically bounded, genetically determined, self-actualizing individual (Austin & Worchel, 1979; Strauss, 1977) as opposed to the view, prevalent in most of our island cultures, of persons being defined through their placement in different social settings (Linnekin & Poyer, 1990, p. 7).

Of tantamount importance is the need for us, Pacific Islanders, to go back and examine our various indigenous notions of education, health, wealth and government in order to see how it might be possible to salvage our educational institutions, and bring about changes to our formal education systems that incorporate our indigenous notions of education as well as those cultural values which have nurtured our societies for millennia.

Above all, we need to continue the process of reclaiming indigenous discourses by placing greater emphasis on our cultures and vernacular languages in our curriculum planning, teacher education and research activities. We need to continue to analyze indigenous structures, processes and emphases, and to find out about assumptions that underlie teaching and learning in our traditional societies. In this way, we may finally succeed in bringing about the kind of synthesis of the best of our cultures with that of our colonial mentors for the sake of learners in the twenty-first century; a century increasingly hailed as the 'Pacific Century'. If we delay or fail in our task, we will continue to witness the erosion and/or disappearance of our cultures and languages, as well as the type of education (*ako*) that provided the link between the two. This would ultimately lead to cultural and environmental bankruptcy, an affliction which has been an obstacle to sustainable development in much of the modern world.

*for we cannot let anything
again keep us apart
mortgage our identity
or even sell our pride
we do not want to suffer pain
privately at the end
because we know deep inside
we've only ourselves to blame*

(Thaman, 1993, p. 11)

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THE CULTURAL CONSTRUCTION OF HOME AND SCHOOL KNOWLEDGE

IN TRIBAL INDIA

Avinash Kumar Singh

The knowledge and skills offered at primary schools in India are of little relevance to the immediate environment of the tribal communities. They have, to a large extent, been dysfunctional for tribal socio-economic development. There is a discrepancy between the learning at primary schools and the lived educational experiences of tribal children at home. In some states the tribal children are taught from the same books which form the curriculum of non-tribal primary school children in urban areas. The textbook content used in the primary schools has little appeal to tribal children who come from many different socio-cultural backgrounds. They experience discontinuities between their traditional ways of life and the ways of the dominant culture imparted through schools and textbooks. There is a gap between the knowledge required to participate in existing agricultural economies and the knowledge imparted through school teaching in tribal areas. The primary school syllabus and textbooks demonstrate the gap. In this paper I examine the gap between the knowledge imparted through Social Studies in the school and equivalent domestic knowledge among the Ho tribal people, using the concept of 'home and school polarity'.

Home and school polarity: the knowledge aspect

The home and the school are the two main centres of learning and teaching in any society. Both impart knowledge and skills, embody goals and expectations, adopt certain procedures for transmitting knowledge, and use a particular language medium. But they differ from each other in several ways. The home is where chil-

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dren begin learning under the guidance of their parents and other family members. School learning for children starts after a certain age under the supervision of formally trained outsiders called teachers. Such fundamental differences are universal. As Lightfoot (1978) comments: '[. . .] conflicts are endemic to the very nature of the family and the school as institutions, and they are experienced by all children as they traverse the path from home to school'. In other words, school learning involves a subculture that is different from that of home learning. Most school-children experience a discontinuity between what is learned in the classroom and what is learned in everyday life. In recent years, several writers have stressed the discontinuity between the home and the school, highlighting the polarity between indigenous home learning and modern school learning in a variety of socio-cultural contexts (Harris, 1984; Christie, 1985; Bude, 1985; Little, 1990). Differences in knowledge content constitute an important dimension of the polarity between home and school.

Tribal India: the Ho

The term 'Tribal India' refers to the tribal people living in different parts of the country. 'Tribal people' refers to those groups of people who have been declared Scheduled Tribes under the Constitution of India regulations. The present list comprises more than 400 tribes, with 51.63 million tribal persons accounting for 7.8% of the total population (Government of India Census, 1991). Beteille (1986) notes that: 'The constitutional provisions have in certain respects sealed the boundaries between tribe and non-tribe, and given to the tribal identity a kind of definiteness it lacked in the past'. The Scheduled Tribes are, in fact, the legal sum total of all the culturally distinct groups that have remained outside the mainstream culture for a very long time.

Although the Scheduled Tribes in India are culturally distinct groups in a legal sense, the element of 'tribalness' or tribal culture varies among them. Tribal communities have undergone change and transformation through cultural contact with non-tribal groups, industrialization, urbanization, and modern formal education. Several tribal groups show the impact of non-tribal cultures on their lives and culture. The Ho tribal group, located mainly in the Kolhan region of the Chotanagpur plateau of India, are the focus of this paper. The Ho are a tribe in transition. Over the centuries, the Ho have changed from being hunters and gatherers in the hills to settled farmers on the plains. In cultural terms, they have been influenced by contacts with Hindus and Christians. Recent transformations in the region have arisen from industrialization and urbanization. Although the Ho as a whole suffer the impact of outside cultures, the nature and extent of the impact of the non-tribal cultures on them varies from village to village. The research reported in this paper was conducted in a Ho tribal village called Parampancho, situated on the border of the main Kolhan forest belt (Singh, 1994).

Tribal and non-tribal knowledge systems

Because the tribal people are 'late comers' to the modern education system, the introduction and expansion of modern formal education has spotlighted the issue of indigenous tribal knowledge and non-tribal knowledge. Tribal people consider any outside influence as non-tribal in nature, for ideas, institutions and persons involved in such influence do not come from the same community (Singh, 1972). Modern formal education represents an outside or non-tribal influence in the tribal communities. However, the tribal people who have adopted non-tribal lifestyles generally have responded to modern formal education more favourably than those who have not. It is important to keep in mind the distinction between tribal and non-tribal influences within a tribal community when examining the tribal children's different responses to modern formal education. In the rest of this paper, I will compare Ho domestic knowledge, as learned and taught in the Parampancho Ho homes, and the primary school knowledge and skills offered to the Ho children in the village primary school.

Domestic knowledge content

The content of domestic knowledge and skills refers here to what the Ho children in Parampancho learn or are expected to learn at home. In other words, a Ho child learns at home what the Ho household and its immediate surroundings provides him/her to learn. As a Ho elder in the village said: 'The child learns everything about his/her household and the village, such as kinship and *killi* (clan), paddy farming, *tusar* (silkworm) rearing and various other matters of domestic importance'. Although the Ho households, unlike the Parampancho Primary School, do not have a fixed syllabus, the parents in their interviews showed a certain level of uniformity in pointing out what *budi* (knowledge and skills) their children learn at home. The content of domestic knowledge and skills was explored by making inventories through interviews with children, parents and other village elders. Daily routines of individual children and their parents were observed and categorized.

Ho children in the age group of six to eleven years perform various kinds of domestic chores, such as looking after infant siblings, sweeping and cleaning, fruit gathering, hunting, fishing, vegetable gardening, paddy farming and *tusar* rearing (see Figure 1). The household activities become the domestic chores for the children, for their contribution to the domestic work is vital for the smooth running of a household. As the mother of a seven-year-old girl admits, the help she gets from her daughter in looking after the baby is invaluable. She remarks: 'I don't know how I would manage working in the paddy field and looking after my one-year-old son, if my elder daughter does not look after him in my absence'.

Several parents reported that their older children often helped in looking after the newborn babies, and by the age of 6 or 7 they had become very capable of looking after their infant siblings. Children often carry babies in their arms.

'Looking after infant siblings' becomes an everyday household chore for a grown child (i.e., 6 to 11 years) if there is a younger sibling in the family (see Table 1). But it is not the only daily domestic chore for Ho children in Parampancho: sweeping floors and cleaning utensils and other such activities, which constitute parts of the daily household routines, become regular domestic chores for Ho children. Furthermore, if the household owns cattle, such as cows and buffalo, cattle herding too becomes a regular feature of children's domestic chores. Ho children par-

FIGURE 1. Domestic chores in Parampancho: the annual calendar.

Household activities	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Looking after infants [year round domestic work for a child with infant or younger siblings at home]	X	X	X	X	X	X	X	X	X	X	X	X
Sweeping & cleaning [daily domestic chores which continue throughout the year]	X	X	X	X	X	X	X	X	X	X	X	X
Cattle herding [year round domestic work. Children are less frequently involved in herding during the rainy season]	X	X	X	X	X	X	X	X	X	X	X	X
Fruit gathering [seasonal, depends upon the seasons of fruits such as mahua, mango and tamarind]		X	X	X	X	X					X	X
Plucking edible leaves [a seasonal domestic chore mainly performed during the pre- and post-rainy season]			X	X	X				X	X	X	X
Hunting [once a full-time daily pursuit in the forest, these days it is seasonal due to increasing deforestation and disappearance of wild animals]		X	X	X	X	X			X	X	X	
Fishing [seasonal, performed mainly during the late summer and throughout the rainy season]					X	X	X	X	X			
Vegetable gardening [seasonal, done mainly during the summer when there is no work load in paddy farming]		X	X	X	X	X						
Paddy farming [although the main source of livelihood, it is seasonal because it is wholly rain fed]					X	X	X	X	X	X	X	X
Tusar rearing [seasonal, worms reared twice a year with a gap of a few months in between]					X	X	X			X	X	X

ticipate not only in the daily indoor household routine work, such as looking after the baby, sweeping and cleaning, but also in outdoor seasonal activities, such as fruit gathering, hunting, fishing, paddy farming and vegetable gardening. Table 1 indicates the domestic chores engaged in by children in different months of the year.

Not every Ho child undertakes all chores. The factors which determine whether a child learns a particular chore in the domestic setting include the number of members in the household, and the age and gender of the child. The smaller the size of the household, the greater the possibility the child will participate in household activities. In Parampancho most Ho households are small and therefore parents often use the children's help in their day-to-day household work. Children below six years of age participate mainly in indoor household work, such as looking after the baby, sweeping floors and cleaning utensils. Children between the ages of six and eleven years participate more actively in outdoor work, such as cattle herding, food gathering, vegetable gardening and paddy farming.

Although there is little gender difference between boys and girls at an early age, the division of labour increases as children grow older. Most Ho adult household activities are organized on the basis of gender. For example, according to Ho customary rules a Ho woman should not hunt and a Ho man should not cook. If we characterize the men's and women's worlds of domestic activities as a continuum, hunting and cooking can be considered as two extreme points between which there are several household activities in which both men and women participate to varying degrees:

(Men's world) Hunting ◀.....▶ Cooking (Women's world)

The gender specification of adult roles affects the nature and extent of the children's participation in household activities. One of the important objectives of domestic learning and teaching is socialization to adult roles, so that children can learn what parents or elder members of the household do. Parents transfer the *budi* they learned from their parents to their own children.

Home *budi* consists of mainly the household chores. Chores may be daily or seasonal routines. As explained above, the participation of Ho children in the household chores varies in terms of age and gender. The younger children undertake mainly indoor and general chores, while the grown children participate in outdoor and gender-specific chores. In other words, as the children grow they learn the knowledge and skills of their age and gender. Through the household chores the children learn not only the specific skills, but also become aware of the roles and relationships associated with those skills. The nature and extent of participation of a Ho child in household work varies from one chore to another. In the following section, the chore and *budi* of tusar rearing for Ho children in Parampancho are described.

LUNGAM PAITI OR TUSAR REARING

The process of tusar rearing as practised by the Ho can be described in terms of the stages in the life-cycle of the tusar worms. The tusar, like other species of silk-worms, has four stages in its life-cycle, namely moth, egg, larva and pupa. Although the tusar worms go through the same life-cycle, Ho children learn the skills of tusar rearing practised in their village. They learn not only the life-cycle of the worms, but also beliefs and rituals associated with rearing them. Many Ho in the village have had tusar rearing skills handed down to them by their ancestors. They tell various folk tales relating to tusar rearing to their children.

The Parampancho Ho rearers use mainly five types of silkworms: Daba, Mugai, Lariya, Jata and Kondeyar, depending upon the season and the availability of the seed cocoons. Each looks different, hatches at different times, is reared on different trees, and varies in terms of the size and the quality of the cocoons produced. Some are monovoltine (emerging or spinning only once a year) while others are bivoltine (spinning twice in a year). For example, *lariya lungam* (early silk-worms) hatch early, are reared mainly for the *dunriya anra* (seed crop), and produce cocoons containing less threads. Among the worms, *Lariya* and *Jata* are the most common ones reared in the village.

Tusar rearing in Parampancho consists of two main crops: *hurin ara* (small crop) and *marang ara* (big crop). In *hurin ara*, the silkworms usually are reared between May and July. This is mainly during the seed crops, for the people engage in rearing the seed cocoons to be used for the *marang ara*. The cocoons produced in this crop have a small quantity of threads. Those who rear tusar during the first season usually cultivate on average 60 to 80 cocoons. The main tusar crop is the *marang ara* which begins in September and continues until the end of December. Following the Ho sexual division of labour, rearing is conducted mainly by adult male members of the household. However, all the members of the household participate in rearing to a certain extent. Ho children learn the knowledge and skill of rearing by observing their kin, as shown in the following observation record:

- CHILD: [It is early in the morning. The child sees his father taking out the cocoons tied to a bow. He runs towards him and enquires about the cocoons.] Hey baba [father], are these [cocoons] fruits? [The child compares the appearance of the cocoons with fruit. Some fruits, such as mango, are familiar to the child and look similar.]
- FATHER: [Correcting the child] No! They look like fruits, but they are not fruits. They are lungam [tusar] cocoons. I have tied them to the bow. In each of the cocoons there is a worm. [The father provides more information about the cocoons.]
- CHILD: Baba, when will the butterflies come out of the cocoons? [The child makes a further query about the cocoons.]
- FATHER: [The father checks near the stalk of the cocoons to locate signs of the butterflies emerging. The pupa inside the cocoons wets the upper part before coming out. The moisture helps the pupa to break the wall. The father locates moisture on some of the cocoons.] Today, any time, some of the butterflies will come out. I'll show you when they come out. [The father puts the bow back in its place.]

- FATHER: *[It is 12 o'clock midday. His son and daughter are nearby. The father notices a few silk moths emerging from the cocoons. He calls his children to see them.]*
 Babu [son]! Era [daughter]! See here, three butterflies have come out.
- CHILD: Baba, they are the butterflies! *[Pause]* Why do some of the butterflies look different? *[The child queries the differences in appearance.]*
- FATHER: Because, they are different in terms of sex. One is female and the other is male. *[The father explains the gender differences.]*
- CHILD: Can I take these butterflies outside to play? *[The child shows lack of awareness about the use of the butterflies.]*
- FATHER: No! We need these butterflies for producing cocoons. You will later see how these butterflies lay eggs, the eggs become lungam chidu [larva], and the lungam chidu spin the cocoons. *[The father gives an idea of the forthcoming rearing activities, but the description is kept brief, as he thinks that the children will understand properly when the activities happen before them.]*
- CHILD: Eya [O.K.].

In the above exchange, father and child are involved in a form of learning and teaching. The child is learning some of the important facts of tusar rearing, for instance what a *lungam* cocoon is, what comes out of a cocoon, and what to do with the butterflies which come out of the cocoons. Since this is the initial stage of tusar rearing, the father gives only a brief account. The domestic learning and teaching continues as the rearing progresses. Besides accompanying their parents, the children help them with rearing.

Thus, tusar rearing is one of the *budi* (knowledge and skills) which Ho children learn at home. The children learn the *budi* from their parents. The parental *budi* is exhibited to the children in the form of daily or seasonal household work. The daily household work, such as sweeping and cleaning, and the seasonal household work, such as paddy farming and vegetable gardening, become the core curriculum for the children to learn. The main features of domestic knowledge and skills can be summarized as follows:

Contextualized knowledge and skills. The domestic knowledge and skills which Ho children learn at home are contextualized, for they are embedded in Ho village life. Learning the *budi* of fruit gathering and cattle herding, for example, depends on the context of the village and comprises not only rearing processes but also Ho beliefs and rituals. Both the household and village contexts are important.

Gender-based knowledge and skills. The domestic *budi* can be divided in terms of gender. A Ho child should learn the knowledge and skills pertaining to his/her own gender. The children are encouraged to pursue their own gender knowledge as they grow older. For example, tusar rearing is domestic work based on the sexual division of labour. Although both boys and girls have the freedom to visit the rearing site, the rearers encourage mainly the boys to learn the skill. Girls learn about tusar rearing by observing and by listening to the rearers.

Unity of household knowledge, culture and society. The Ho emphasize their Ho identity in most of the domestic work they do. The children must learn 'to be Ho'. Parents remind their children of this during their participation in household chores. For example, according to a Ho elder, '[...] earning cash by rearing cocoons is important, but it is equally important that tusar rearing by a Ho must be conducted in the Ho way'.

Knowledge and skills based on oral resources. Associated with the domestic chores is a vast stock of oral knowledge in the form of folk tales which parents and elder members of the household tell the children when they ask them to perform domestic chores. For example, in tusar rearing, the parents tell their children a number of stories regarding the origin of the lungam and the role of *Sinbonga* in the protection of their ancestors' *lungan paiti*.

Thus, the context of everyday household life determines the content of domestic knowledge and skills to be learned by the Ho children. The domestic knowledge content relates to whatever goes on in and around the place where a child is born and raised. The children learn about their household and village by performing the household chores.

The content of school knowledge (*budi*)

Ho parents say that children gain *budi* in school. School *budi* here refers to the knowledge and skills the Ho children learn at school. Such knowledge is offered mainly in the form of textbooks. According to the teachers, they teach what is prescribed in the syllabus and written in the textbooks. The textbooks have been written in the light of the New Education Policy and the syllabus prescribed by the state government of Bihar for different grades in each subject. The Parampancho Primary School, like other primary schools in the region, follows the primary school syllabus approved by the Department of Education, Government of Bihar.

Language, mathematics, science, and social studies constitute the main subjects of the primary school curriculum and are taught exclusively from selected books. School knowledge is systematized not only in terms of subjects, but also in terms of grades. The nature and extent of knowledge and skills taught in the schools varies from one grade to another. Children in lower grades study fewer subjects and use fewer books than children in higher grades. There is a specific book for each subject. For example, for Grade I language, the syllabus specifies *Hindi-Bal Bharti*; in mathematics, *Aao Ganit Seekhein*; in social studies, *Hamara Nutan Samaj*; in English, a modern ABC picture book; and in science, *Hamara Nutan Vigyar*. But the teachers report that it is unrealistic for a Ho child to complete all the books within one academic year. In the first grade, for example, the children manage to complete only the language and mathematics books. Until they learn Hindi properly, they cannot learn other subjects. School learning and teaching for the first grade concentrates mainly on learning literacy and numeracy skills.

According to the teachers, such selective teaching applies to most of the schools in Ho rural areas. The District Superintendent of Education reports that most of the primary schools teach only selected books. Subjects as well as books are taught only selectively. There is a considerable difference between the intent and the implementation of the primary school curriculum in terms of the teaching of particular books. School knowledge is mainly textual. The Parampancho Primary School teachers teach only from school textbooks. The teachers claim that children are not taught any other curricular areas such as physical education, gardening, art and music because of a lack of resources.

The prescription of knowledge in the primary school syllabus relates not only to grades but also to the content of written knowledge. The textbooks do not contain local information. By reading the textbooks the children learn mainly about the broader social groups. Uniformity is one of the important characteristics of the primary school syllabus, and the textbooks are intended for all primary school children in the state. The teachers follow certain fixed procedures or methods in teaching that are laid out in the primary school teachers guidebook, and follow the teaching instructions and sequence of lessons suggested in the textbooks. They begin with lesson one in a particular book and proceed to the end as the teaching progresses during the year.

School knowledge and skills are organized according to disciplines. Disciplines are organized in the form of books, and books in the form of lessons. In other words, school knowledge and skills are organized, divided and further subdivided into subjects, books and lessons. The books follow a particular order and sequencing of lessons. In the following section we shall consider the subject of social studies.

THE KNOWLEDGE CONTENT OF SOCIAL STUDIES

Social studies comprises geography, history, culture and social life. It combines these various fields of knowledge which later become separate subjects. Teachers report that they teach what is written in the textbooks. For example, in Grade III they teach from the book *Bihar Gaurav* which contains materials on geography, history, and social and cultural life in the state. In geography, the book deals mainly with the geographical setting, including climate, rivers, mineral resources, agriculture, industry and transport. It highlights the history of the state, and especially the state's contribution to the country's struggle for freedom, with special reference to people involved in the struggle. It also describes the various festivals of the state. In the following example the teacher teaches a new lesson:

[The teacher decides to teach a fresh lesson and calls all the children from Grade III for group teaching. As all the children from Grades I to V are taught in one room, the teacher calls the children to his table so that they can receive special attention.] All the Grade III children, come here. Today I shall teach you lesson number twelve, 'agriculture and crops'. [The teacher shows the map of Bihar with which the lesson begins.] Look at this map properly! The map shows which crops are grown in which parts of Bihar. Look here at the bot-

tom, the Singhbhum district. Rice and wheat are grown. [*The map shows the distribution of crops grown in all districts in the state of Bihar, and crop distribution in Old Singhbhum district. It is an old map and does not show the recent division of Singhbhum district into East and West parts. The teacher then reads the text of the lesson sentence by sentence.*] The forests grow themselves, but the crops we have to plant. In agriculture, we sow seeds and grow them as crops. Agriculture needs fertile soil and water. The plains get their food from soils. [*The teacher reads on until the last sentence.*] If we work hard, our state will be a happy state. [*The lesson thus ends on a moral note concerning the relationship between the children and state. There is no verbal exchange between teacher and students.*]

This example from a social studies lesson illustrates how the knowledge of ‘agriculture and crops’ has been prescribed in written form. It is decontextualized knowledge, having been abstracted from the day-to-day realities of agricultural activities in specific settings. The textbooks have been selected according to the prescribed syllabus written in the form of a text and compartmentalized in terms of subjects, books and lessons. The main features of school knowledge can be summarized as follows:

Decontextualized knowledge and skill. The school teaches knowledge and skills which are of general importance. Following the government guidelines, the textbook materials contain lessons which reflect only the general features of broad social entities such as state and country. According to the state guidelines, school textbooks should be uniform to the extent that they contain materials from several contexts. As the above example of social studies illustrates, textbook materials refer mainly to the ‘outside’ or Diku world. So the Parampancho Primary School teaches mainly decontextualized knowledge.

Prescribed knowledge. The primary school policy guidelines indicate the adoption of the uniformity principle in the textbook materials. The decontextualization of school knowledge is based on the prescription of the knowledge in the form of the school syllabus. That is, the school must teach according to government guidelines. The Parampancho Primary School teachers, as mentioned earlier in the chapter, follow mainly the government-prescribed primary school syllabus in the teaching of particular textbooks. The syllabus is based on the national and state educational policy guidelines. The syllabus specifies all the subjects and books which should be taught to the children according to their grades.

Written (textual) knowledge. The prescription and decontextualization of school knowledge relates almost entirely to written knowledge in the form of textbooks. This is one of the reasons why children begin their school education learning literacy skills such as reading, writing and numeracy. In fact, the school introduces children to the world of written culture where lived contexts have been transformed into written texts. The children know about the contexts only by reading about them in the textbooks.

Compartmentalized knowledge. The school knowledge is divided in term of subjects, within a subject in terms of books, and within a book in terms of lessons. In the social studies syllabus, knowledge of geography, history and culture has been systematically divided up in terms of lessons. The teacher introduces the lessons to the children as the teachers' guides suggest.

Content polarity: some concluding contrasts

The Parampancho Ho use the word *budi* for knowledge and understanding. The term *budi* is a Ho adaptation of the Hindi or Sanskrit word 'buddhi' which also means knowledge. As the Ho language does not have the aspirated letter 'dh', the Ho call 'buddhi' *budi*. *Budi* brings maturity and enables a person to undertake work properly. To survive and progress in their lives the children must acquire *budi*. *Budi* is the general term for knowledge, of which there are two types, school *budi* and household *budi*. Children learn a certain amount of knowledge and skills both at home and in school. As one Ho parent says:

Budi means knowledge of anything. The children gain *budi* from both the home and the school. But there is a difference between home *budi* and school *budi*. While at home children learn farming and vegetable gardening, while in the school they learn letters and numbers.

Although both the Ho household and the school offer certain kinds of *budi* to children, the two learning environments vary in terms of the nature and extent of the knowledge and skills transmitted. In this final section I shall indicate similarities and differences between domestic and school knowledge in the context of the Parampancho village.

Household chores versus school tasks. The Parampancho village offers knowledge and skills mainly through performing household chores; in school children learn academic knowledge by performing the school tasks written in the textbooks and suggested by the teachers. Whereas children learn various types of domestic chores such as cooking rice, cleaning utensils and plucking leaves at home, they learn whatever is written in the textbook at school. The school transmits no content about tusar rearing or vegetable gardening. According to the teachers, they teach nothing about household chores because they do not form part of the school syllabus. In other words, knowledge learning in the two 'sites' is discrete and does not overlap.

Relevant knowledge: conceptualized versus de-contextualized. Both parents and teachers teach the knowledge and skills which are of relevance in their zones of influence. At home parents teach whatever is relevant in the immediate environment of their households and village. There is a significant difference in terms of relevance between local village knowledge and the knowledge which is transmitted in the school. At home, the children learn locally relevant knowledge and skills

such as paddy farming and tusar rearing; in the school they learn knowledge and skills of national and international importance; e.g. knowledge about the cotton textile, iron and steel industries, and about India's freedom struggle. The social studies books contain reading material of little immediate relevance to tribal children. The content of the subject taught in the school refers mainly to the cultural practices of non-tribal Hindus.

Prescribed knowledge and skills: gender-based versus grade-based. Both household and school knowledge and skills are prescriptive because access to them follows certain rules and regulations. While households follow their own customary rules as laid down by the clan elders, the school follows government guidelines in the form of the primary school syllabus. However, while home teaching and learning takes gender as the main criterion for differential transfer of knowledge and skills to children, school teaching and learning recognize grades as the main criterion in the organization of knowledge and skills. For example, according to Ho customary rules, Ho girls are not supposed to hunt and Ho boys are not supposed to cook. In the school, however, the children of a particular grade can learn only those lessons which are included in the books prescribed for them by the syllabus. School knowledge is open to all children in a grade irrespective of gender.

Forms of knowledge: oral versus written. Both home and school knowledge are presented to the children in certain communicable forms. While household knowledge is available to children mainly in an oral form, such as through folk tales, school knowledge is available mainly in written form. Parents often tell mythical stories to their children to increase their awareness of the historical roots of particular incidents. According to parents, children learn various aspects of Ho culture through folk tales handed down from generation to generation. There are several folk tales about the origin of 'tusal'. The school offers knowledge mainly in the form of textbooks. Children learn about various cultures through the books. This distinction raises the issue of context versus text in the polarity debate. While home knowledge is rooted in particular contexts and is transmitted orally, school knowledge contains an abstract context and is transmitted via written texts.

Organized knowledge: holistic versus compartmentalized. The organization of home and school knowledge and skills follows different patterns. Home knowledge is embedded in the context of the home and village. While performing a particular chore, children learn about the larger context. For example, by performing domestic chores in tusar rearing, children learn not only about the life-cycle of tusar worms, but also about the geographical setting and religious practices associated with the rearing. Children thus learn their community's values through such recurring phenomena. The Ho use the same word, *sirma*, for both sky and year. The association of the two is based on the fact that the year in Ho cosmology is complete only when the constellation of certain stars returns to the same position after rotation. They use the same word *chandu* for month, moon and menstrua-

tion, for all three are interrelated. They use the same word *bat* for the words market and week, as markets in the area are held on a weekly basis. The school teachers, on the other hand, make the children aware of the differences between sky and year, market and week, and so on. Domestic knowledge is unified and holistic, while school knowledge is offered to children in ways that are compartmentalized and discrete.

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CULTURE AND LEARNING IN

A NEW ZEALAND

SECONDARY SCHOOL

E d n a T a i t

This paper describes the approach of one New Zealand State secondary school, Tikipunga High, to the formal learning needs of its students. The paper focuses on Maori students but the school's approach is intended to help all students whose culture makes them vulnerable to school experiences which could reduce their adult life choices.

The concept of culture is complex but for this paper and for the school's work it means the shared perceptions within social groups, and these may be as numerous as the different value systems on which they draw. Culture can be described in terms of the language habits (spoken or symbolic) which define, produce and reproduce the world for its users, and often are reflected in the practices of the group. In simple terms, culture can be viewed as the way people think and act. As well, culture may be modified in its transmission from generation to generation and it may be imposed on subordinate groups. This definition allows for ethnic culture and, for school purposes, the cultures of gender, socio-economic status and youth in particular. It also recognizes the multiplicity of cultural challenges which schools face.

It should be stressed that the school's work is not and never will be finished because the school context and the students' learning needs will keep changing. The model is offered, therefore, only as the current response to students' needs. The claim this paper makes is that the practice of continuing and democratic critical reflection on educational theory and school policies and practices is the essential feature of the school's approach. It is process, rather than product, which is stressed, although the school does recognize that the product is always important.

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The Maori

The Maori are the first people of New Zealand. Increasingly, they are preferring to call the nation by its original Maori name—Aotearoa. The term 'Pakeha' is used to denote the non-Maori population. Space does not allow a full account of Maori history and achievements, but a brief summary is useful for this paper.

The legal barriers used by many colonial powers to control indigenous populations were not as discriminatory in New Zealand as elsewhere. As early as 1840, Maori were extended all the rights and privileges of English subjects by the Treaty of Waitangi, which was signed by many Maori chiefs and by the governor of the (then) colony. Full male voting rights and special electorates gave Maoris representation in parliament in 1867, while Maori women gained their right to vote in 1893, at the same time as 'Pakeha' women. Non-governmental support began early and included church groups and tribal councils; later came more focused action, such as land-incorporation schemes, health and housing campaigns, a Maori Arts and Craft Institute and the Maori Women's Welfare League.

Schooling also was provided, either in the local schools with the settlers' children or by the provision of special schools for children living in remote areas. Maori children were included in the 1877 Education Act which established compulsory elementary education for all. They also were included in the 1902 Free Places Act which marked the beginning of secondary schooling, at least for the most academically able children. By this time there were already some secondary boarding schools established for Maori students.

The intentions and expectations of the colonial leaders throughout this period were that Maoris should and would be assimilated into the European way of life. This view continued as policy until the 1960s, and some argue that it is still a covert goal of some 'Pakeha' practices today. Initially, however, the Maori co-operated with the new settlers and rapidly and enthusiastically adopted their goods and ways including the new schools and the English language which they saw as the paths to equality in the future (Metge, 1967). It was not long before concerns arose, but, although these were increasingly expressed and in a variety of ways, the cultural adaptations continued.

In the last thirty years, however, there has been a Maori renaissance and although its impact has been uneven it reflects a strong cultural response to the effects of Maori/Pakeha interaction. In the 150 years that have followed the signing of the Treaty of Waitangi there has been a serious erosion of the foundations of Maori culture: land ownership and language usage both have declined. Land loss is a concern beyond the scope of this paper but its coincidence with language loss contributed to the renaissance. The decline of Maori language usage was important and reflected the growth of two cultures, one private and the other public. As the numbers of settlers increased, and their control grew, the use of English spread. Its use in the work place, schools, government and in all aspects of life made it the public (and therefore necessary) language, and for a long time the Maori language was not offered, nor allowed to be spoken, in schools. Consequently, Maori language, and

the values, beliefs and practices it conceptualized, became private, used only in the home or emerging occasionally at communal or ceremonial gatherings. As the Maori became urbanized and dispersed, notably in the 1950s, it became increasingly difficult for families to hold on to their language and its use declined further.

The loss of land and language is common to many colonized people and the consequences are similar. In the case of the Maori, leadership and power-holding declined and there was a general demoralization of the people. The accumulated effects may be seen in a summary of their social and economic position today.

The self-identified Maori comprise approximately 12.9% of the population (although inter-marriage with 'Pakeha' blurs this figure) and for the most part they are urban dwellers (*The New Zealand yearbook*, 1994). Some have achieved high social status as doctors, lawyers, judges, members of parliament, church leaders, academic leaders in tertiary institutions, diplomats and heads of government departments. A very recent governor-general of New Zealand, Sir Paul Reeves, is Maori. But for the majority of Maoris the picture is different.

In comparison with 'Pakeha', the Maori have a higher rate of unemployment, poorer health and a shorter life-span. They are less likely to own a home (a New Zealand 'norm') and are more likely to leave school with no or few qualifications. Almost half of the custodial sentences are for Maoris. Only about 10% of Maoris speak their language (*The New Zealand yearbook*, 1994).

With the renaissance, Maori culture is a little less private than thirty years ago. Educational leaders have recognized the role of schools in the efforts for Maori equity. The content, practices and place of culture in formal learning are now well-established. The teaching of the Maori language is pursued in schools, as are efforts to promote Maori learning achievements, but there is a long way to go before the early dream of equality is reached. One difficulty is that the learning process in a New Zealand State school is different from the traditional way in which Maori children learned.

The Maori knowledge system was sophisticated in organization and, as in the European system, there was a hierarchy of learning with status given to some areas and not to others. Values education was (and is) significant and the language reflects this, with metaphor and allusion giving it a special richness. Language is the essence of Maori knowledge today because it provides access to the culture. Family histories, the protocol of ceremonies, knowledge of the spiritual world, traditional medicine, music, dance, games, stories of the different tribes, the significance of land and more, are all transmitted in their fullness only through the Maori language.

The processes for acquiring knowledge were multiple and included learning by watching and doing, with a high emphasis on verbal skills and memory. The context originally was provided by the ebb and flow of life in the village and so learning was task-focused and integrated with work and leisure, birth and death and the rituals and responsibilities of communal life. The family members and elders, especially, all contributed in different ways to a child's education. Some young people who showed special abilities were selected to receive privileged knowledge and were taught appropriately.

The tasks for Tikipunga High School, therefore, were to increase opportunities for language learning (especially), to involve the elders and families in teaching activities, and to find a curriculum delivery process which matched more closely the learning styles of the students.

The New Zealand secondary schooling context

The organization, curriculum content, assessment systems and teaching styles of New Zealand secondary schools today reflect the interaction of the nation's economic imperatives and social aspirations.

Before 1989 the focus of secondary schools was academic, with status and post-school opportunities going to students with the highest examination results. A basic view was that if students worked hard they would succeed in school and, by implication, in life. This suited those students who were comfortable learning in a culture in which knowledge was organized hierarchically, transmitted abstractly and compartmentally, assessed anonymously and focused on distant goals. However for many students with cultural knowledge and experiences different from those of the schools' policy makers and teachers, failure was the common experience and with it came consequential restrictions in adult life.

In 1989, however, the whole education system was reformed. Administrative control was decentralized to school Boards of Trustees; based on the concept of a seamless education system, new national curriculum and assessment frameworks were developed. The result has been an expansion in the learning areas schools may offer and in which students may gain nationally recognized credentials. The vision is that schools will be responsive to their communities' aspirations, as well as providing their students with the skills, attitudes and values specified in the national curriculum framework. It is hoped that there will be a more efficient use of national schooling resources, a greater responsiveness to students' and the nation's needs for life in the twenty-first century, and an improved equality of access to, and equity in, schooling outcomes. Equitable schooling outcomes for girls and Maori students require special attention and extra funding for schools serving low socio-economic areas is provided. All schools are urged to foster not only academic achievement but also skills for work, a reflection of the decline in employment opportunities, particularly for the unqualified and under-qualified school leavers.

The approach to working with students which Tikipunga High School has developed began before the 1989 reforms, but those reforms have eased the process in later years.

Tikipunga High School

Tikipunga High School is twenty-five years old and is situated in Whangarei in the northern part of the north island of New Zealand. It is a state school of 750 students. Its student body is bi-ethnic (48% are Maori and 52% are 'Pakeha' of

European ancestry) and co-educational (with equal numbers of boys and girls). The school is ranked by the Ministry of Education as a Decile 2 school on a 1 to 10 scale in which 1 equates with severe social and economic deprivation in the school's community.

Unlike most secondary schools in New Zealand, Tikipunga's students usually come in at Form One (approximately 11 years of age), but each year 50 to 70 students join the school at the upper levels depending on the places available. The school also welcomes about 30 adult students and offers places for 32 severely physically and intellectually disabled students every year.

The school is one of five secondary schools in the city and most of its students come to it because it is local. Others, however, attend because families value its innovative approaches or because they want their children to take some of the special courses the school offers.

The cultures of the school are complex and interconnected. The student cultures of gender, ethnicity and disability all meet in the culture of youth, and most students share the culture of the socially and economically disadvantaged. The staff culture is more homogeneous: men and women are evenly divided but the majority are 'Pakeha' and middle class, and they share the experience of academic success and a commitment to student achievement. Students and staff participate in a school culture which is best described as a culture of change. A high value is placed on 'having a go', that is, on trying out ideas with the understanding that if a practice is not effective it will be adjusted or dropped. This 'rational and responsible' risk-taking approach has produced many changes in the school over recent years.

THE CHALLENGES

The first challenge for Tikipunga High School lies in the question: 'What causes school failure?' There were many educational and sociological theories to consider. The first set of theories could be called 'deficit' theories, as they blame the family, citing inappropriate child-rearing practices, inadequate (English) language skills, a lack of parental interest in education, poor study habits and negative peer pressure. Alternatively they blamed the schools, citing such reasons as inappropriate use of resources, low expectations of students, inadequate teaching skills, and institutional bias against girls and Maori. A second theoretical approach argued positively (but in spite of the evidence) that equal treatment would produce equality of achievement. A third set of explanations talked of social structuring and the role of schools in reproducing the culture of the dominant group in society. They argued the far-reaching impact of poverty and its special significance for learning. Which of the many explanations for school failure should the school accept?

The second challenge was provided by the views of Maori and women writers. Although there were differences between them, there was also a strong common theme, with both groups describing their lack of power in an inequitable society. Pat Hohepa (1978), Ranginui Walker (1985) and Wally Penetito (1988)

protested the dominance of non-Maori practices and perspectives, while Mollie Neville (1988) and Sue Middleton (1985) argued against the hegemony of New Zealand's patriarchal society. Both Maori and women views highlighted the need for schools to think more closely about equity of outcomes rather than equality of treatment. How was the school to meet this problem of powerlessness?

The next challenge was particularly difficult. If the school reform process, for example, pursued a strong Maori focus there were potentially negative side effects. One might be that Maori students, willingly or not, would be locked into a cultural cage. While it was important to affirm Maori knowledge and learning processes it was also important not to deny Maori students access to other knowledge systems and learning processes. A second concern was that an emphasis on Maori or girls' cultural learning needs might well side-track the school from more important negative effects (such as economic need) in some or all of their school lives. Furthermore, an affirmation of ethnic or gender knowledge without the necessary skills for modern living might have an even greater marginalizing effect than being Maori or female. With these concerns the school recognized the challenge of providing both necessary or basic knowledge and also multi-cultural learning opportunities. How could this be organized so that there were no negative consequences for some students?

The fourth challenge grew out of the third. Whatever the school did, it should not be at the expense of the cultural needs of other groups of students. Thus, a promotion of Maori culture should not diminish the learning of girls or the disabled, or any other students in the school. But at the same time, whatever was done should not be an add-on extra, superficial in status, process and results. How could this be done?

Equally important was the challenge of gaining support for any changes in school processes. If the reforms were unacceptable to families or to the community, the effects on the students could be worse than the negative influences being targeted. Was it possible to make major changes and keep the support of most cultural groups in the school's community?

Next - and this challenge had major imperatives in it - the reforms had to be possible within the national curriculum and all other legal requirements, as well as compatible with the funding provided and the skills of the staff. The time limitation was recognized as a part of this challenge. A school week of only twenty-five hours provides very difficult constraints for reform. How could effective changes be made with no extra resources?

Finally, there was the challenge of 'Schooling For What?' To talk of preparation for adult life, or life in the 21st century, was not only simplistic but also potentially arrogant. The possibility of being wrong, of making mistakes, had to be recognized, and safeguards for the students needed to be built into whatever was done. Schooling should provide students with stepping stones, not stumbling blocks, to happy and fulfilled lives, but that judgement is usually not possible except in retrospect, and then it is too late. The concept of transformative schooling was attractive but offered no tested prescriptions for action. What should the school do?

So many challenges required some basic guidelines. For Tikipunga High School it was agreed that there would have to be continuing critical reflection on all processes and their results, a willingness to change processes if they were ineffective, and the school system had to be organized in such a way that desired changes could happen. So the work began.

IN THE BEGINNING

The work of James Banks (1981) provided the starting point. He stressed the importance of all aspects of the learning environment and the need for their review and reform for effective multi-cultural learning. This approach produced the first full school review by staff and members of the school community, and a number of areas requiring change were identified. It was agreed that a programme of transformation should commence, that risks were involved, and that ongoing review was essential.

The early changes tried to address some of the mixed cultural messages of schools. For example, teachers promoted the value of democracy and equal rights but often delivered the message autocratically, unevenly and in a hierarchically-organized context. Or the school urged co-operation when, at the least, learning for assessment was obviously competitive. Sometimes the school claimed that it existed for students when all of its processes and practices were clearly to meet teaching needs. Changes, therefore, included a flattened corporate management system based on portfolios and staff committees, a student centre to help students with their day-to-day concerns, the abolition of the school uniform, the building of a student cafeteria, the replacement of all school rules with a single rule of non-violence, and the introduction of courses in health and school-to-work transition. The practice of celebrating achievement, small or large, staff or student, in or out of the school, was also established.

It was this spirit of ongoing critical reflection for total school reform that brought the staff and community of Tikipunga High School to thinking about the way in which the curriculum was delivered. The first thinking focused on the needs of senior secondary students for whom tertiary education was either not desired or was not even a possibility. For these students the academic, examination-oriented senior curriculum was irrelevant. What was needed were practical life skills for work and leisure, and recognition when such learning was achieved. This focus raised a number of problems including the difficulty of running two different senior programmes with no extra staffing, the possibility of second class status for the non-academic courses, and the recognition that a senior life skills course would not necessarily address the student-school culture gap and might continue to structure students and reproduce social inequities as theory suggested.

A one-year trial was held. The review showed that the anticipated problems of organization had emerged but that the approach had the potential to respond to different cultural learning needs including the recognition of other (non-school) knowledge and skills and also students' diverse learning styles and speeds. The

review showed, however, that the programme was essentially a 'tack-on' and that a more inclusive approach was needed if the vision of helping all students was to be pursued. More thinking was needed, and more extensive changes were required. It took two more years before the new model of curriculum content and delivery was established, and the consequential changes to other related school processes are still continuing. An overview of this part of the reform now follows.

THE MODEL AND ITS RATIONALE

What has evolved has become known in New Zealand as a modular curriculum delivery system, but the title is deceptive. The model includes more than the way knowledge and skills are taught. It includes what is taught, how learning is assessed, students' access to learning opportunities, the approach to timetabling, the guidance systems needed to assist students' choices, the all-important retraining of staff, and the changing of perceptions, in and out of the school, of what 'worthwhile knowledge' is and should be.

The model is based on the view that the school should make a positive contribution to the choices students are able to make for their post-school lives. It recognizes that most of the students in the school are culturally vulnerable to learning experiences which might restrict or negate their post-school opportunities, and that many students are particularly at risk because of the combination of the biological and biographical cultures they have inherited. Maori girls from working class homes, for example, are potentially more vulnerable than their brothers, and both groups are more at risk than the 'Pakeha' working class children.

THE FRAMEWORK

To help every student is difficult, but the modular approach tries to do so by providing each with her or his own individual learning programme, not just in senior school but from the first year of joining Tikipunga High. To do this, the introduction of more and new opportunities for knowledge and skills acquisition was required and this meant that somehow more time had to be found. It was created in two ways. First, all curriculum content was examined for unnecessary overlaps; these were surprisingly numerous and were removed. Second, all areas taught, both existing and new, were reassembled into modules of four hours a week for ten-week blocks. This not only gave the extra time needed but also provided visibly equal status to all parts of the curriculum. Furthermore, it provided increased staffing flexibility and so eased timetabling difficulties.

The change from year-long courses to modules had other, and major, advantages for cultural reasons. Learning became focused on close rather than distant goals which suited most students while not working against any of them. Also, learning became much more task-oriented and 'real', which suited Maori students initially and is now favoured by all. Most of all, it broadened student choice from six year-long courses to twenty-four modules and immediately increased the stu-

dents' opportunities to explore new areas of knowledge. If a choice turned out to be inappropriate, at most only ten weeks had been given to it rather than a full year.

MODULES

A modular approach is more than just a reorganization of school learning areas. Each module has five important parts in its description: the prior learning needed for entry, the content to be covered, the level of difficulty, the desired learning outcomes and the method(s) of assessment. This information enables students and the staff assisting them to select the modules most suitable for their goals and learning styles. There are also modules in many areas which allow students to 'catch up' or gain prerequisite knowledge and most modules can be credited if a student can demonstrate mastery of the desired outcomes. Some modules at each level of difficulty are compulsory to meet the seven learning areas required by law.

The provision of a wider choice of learning opportunities and a clear statement about what the students will experience in the classroom removes the 'stepping into the dark' of the previous system and promotes confidence and the anticipation of achievement. Most importantly, it frees students to learn at their ability level. In the past, to be fourteen years of age was to be a fourth former following the prescribed course. In the modular system, to be fourteen might mean studying a range of modules from Level II to Level VI.

But modules are more than simply dry descriptions of proposed teaching. They are all named precisely and enticingly. For example, English at Level III includes 'Writing for children', 'Mime and talk', and 'Using a video camera'. From these titles it may be guessed that practical skills have been elevated in status. With the expanded curriculum the worth of practical knowledge is promoted not only in the traditional 'academic' areas but also in many of the new modules: gardening, care of children, budgeting, vehicle maintenance, establishing a business, managing a cafeteria, finding an apartment, public speaking, relating to others, physical fitness, anger management, legal studies and first aid. The list is long and includes Maori arts and crafts, music and dance, bilingual learning and specialist modules in Maori history, rituals and practices to complement the Maori language classes.

ASSESSMENT

Assessment for all modules is achievement-based or criterion referenced, using a scale of 1 to 5 for each learning outcome, each number translating into a statement about the level and content of achievement for the particular outcome assessed. In senior school many modules also provide access to external examinations or awards. All school assessments are provided at the end of each module so that students have quick feedback on their achievements. This practice means that every student leaves school with a detailed set of descriptions of school learning achievements, and this is especially helpful for early leavers or those with no national awards.

STAFF

The staff initially required a major retraining programme to learn how to write modules. The usual practice is that school curriculum statements are written for teachers to follow, with their students being given only the titles of the year's work, such as English, Mathematics, History and so on. The modular curriculum is written for students and the staff had to learn how to do this. The staff also had to learn how to establish prerequisites, build in opportunities for students to reprocess work to reach a higher achievement level, establish assessment tasks and the criteria for assessment, and determine the different ways students could achieve the described tasks. Staff also had to learn how to provide guidance for the students, not only according to their ability but also their goals, their preferred ways of learning, and their prior knowledge and skills. One consequence of this was that the (now large) Modular Studies Book, which contains a full description of each module offered, was quickly extended with flow charts to show modular paths; a page was added on which students could explore possible choice variations, and some general advice on making choices and the national requirements for learning were included. Some staff also took up the challenge of timetabling the new approach and computerizing the production (each ten weeks) of the many assessment statements.

In some ways the staff development was the most difficult part of the curriculum reform. Retraining had to be carried out along with full teaching programmes and was inevitably slower than desired.

COMMUNITY SUPPORT

The winning of family and community support was simple and speedy. The students quickly understood the new approach, liked it, and said so. Families saw positive attitudes to, and achievements in, school where there had previously been none, and they encouraged the school to continue its approach. Also, deliberate and considerable efforts were deliberately made to involve Maori families and elders in classroom work. This was good not only for students' learning but also for the status of the reforms. Media coverage followed, other schools came to watch and learn, and in three years Tikipunga High School was established in national opinion as the exemplary modular school.

The critical reflection continued, of course, and for two years the school worked with the New Zealand Qualifications Authority which evaluated progress and the results. The Authority concluded its study of the school by publishing *The Tikipunga experience* (1992), which gave a positive account of the school's approach.

THE OPERATION OF CURRENT PROGRAMMES

Now, six years after the introduction of this programme, all students learn in a modularized curriculum. Selection of modules is made from the Modular Studies

book, which is produced annually and which describes in some detail the modules which are offered. The programme is supported by careful monitoring of individual students' selections to ensure that government requirements of core programmes are followed, and to help students gain the learning they need for their post-secondary school goals. There are now a large number of students working in one or more areas of learning above their chronological age level or in catch-up modules.

It is difficult to statistically demonstrate the linkage between modular studies and external examination results, but the latter have risen dramatically and in the University Bursary examination for 1994, in almost every learning area students achieved above the national norm. But there are interesting changes of other kinds. For example, the proportion of Maori students in the school has risen from one-third to one-half. There may be other reasons why they come to this school, and its recent selection as a technology lighthouse school may be one, but still-to-be-published research carried out in 1994 indicates that Maori students feel comfortable in the school and like the wide range of choices. It is also interesting that students who have been rejected by other schools come to Tikipunga High and succeed. This second chance, of learning in a different way, appears to be useful for them also.

To describe the students' programmes is difficult because they are all different. At any time the combination of a catch-up module in one area, one or two compulsory modules at a different level, and some challenge modules at a higher level, is quite possible. The approach is complex and the students' use of it is total. More and more, they are in charge of their school lives and not merely observers of school experiences which they either do not understand or do not want. The emphasis is on student choice, the provision of a wide range of equal-status learning areas, the use of extensive staff guidance and shorter and more precisely focused delivery of the curriculum, which altogether seem to close the student-school culture gaps.

Conclusion

It is now six years since the reform of the curriculum area of the school began. James Banks appears to be right: reflection on one area will produce changes elsewhere if the total school environment is reviewed. At Tikipunga High School the curriculum reform led on to major changes with staff development programmes, student guidance, assessment practices, timetabling and reporting. It changed the school's language of teaching and learning and put the voices of the students into their classroom experiences. It broke down the uniformity of age in class groupings and it broke open the chronological cage of learning. The school experience for the students is now much more positive. A recent publication, *Succeeding generations*, by Roy Nash (1993), has noted the impact of limited family resources on learning and this research has encouraged the school to continue its modular approach. Also, two official reviews of the school in 1993 and 1995 have declared that the school is meeting the cultural and learning needs of its students effectively.

But what of the cultural challenges which started the process of critical reflection thirteen years ago? Maori knowledge, and ways of accessing and processing it, are better provided by the school. The choices between and within modules, the varied teaching styles, the achievement-based assessment, the guidance systems, indeed, all that the modular system includes, is culturally more appropriate for Maoris, for girls, and for the majority of the school's working class students. Also, the challenge to avoid locking students into or out of their own or other cultural knowledge is safeguarded by the accessibility of all modules. Nor is one culture promoted or tacked-on; there is more visibility of Maori practices in the school but much else is also non-Maori. The challenge of gaining public support was achieved by involving the community from the beginning. National curriculum requirements were met and work was completed with the resources already in the school, mostly because it had to be, but also because of the modular flexibility itself.

Two challenges remain. While students (and their families) have gained power in the school and now have better choices for their adult lives, the society in which they will live as adults is not yet culturally equitable. Thus the challenge of 'Education For What?' remains.

In August 1995 the school and its community will come together again to review the total school environment. It is likely that 'Education For What?' will continue to be the major concern for the families of not only the Maori students but also of the girls and - in particular - the socially and economically underprivileged. The hope is that better schooling will produce wiser adults and a future better than the present:

*I teach I touch the future
I learn I am the future.*

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TECHNACY:

TOWARDS A HOLISTIC UNDERSTANDING

OF TECHNOLOGY TEACHING AND LEARNING

AMONG ABORIGINAL AUSTRALIANS

Kurt Seemann and Ron Talbot

This paper takes stock of Western education generally and technology education specifically. It is visionary in its approach, arguing that a creative leap from convention is necessary when transferring technical education into non-Western cultural settings. The flaws of technical education in modern industrialized societies are particularly evident in cross-cultural delivery situations, both in overseas development assistance projects and in cross-cultural projects within a nation. In response to this, our paper outlines a new framework using the concept of 'technacy education'. It is based on a holistic approach to perceiving, teaching, practising and learning technology in any culture. We have tried to identify the universals that define holistic technology education. In terms of outcomes, we seek to produce skilled, holistic thinkers and doers who can use appropriate technologies that

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are responsive to local contexts and needs. In other words, our task is to produce technate individuals, just as other educationists are striving to produce people who are literate and numerate.

Human, technical and environmental factors are elements of technacy and are considered primary to human consciousness, understanding and survival. The technacy model describes a universal framework for exchanging technical practice between cultures, and for understanding the educational value of technology in terms of the way the above factors relate to each other and to problem-solving models generally. In this sense, technacy is a model born from 'first principles', the reasoned understanding of which contributes to practical holism. Technacy therefore can be ranked as the third fundamental element of education alongside literacy and numeracy.

It will be argued that it is Western education more than indigenous education that is likely to need de-schooling and re-schooling in technacy. Holistic thought processes and their translation into holistic practice are likely to feel more foreign and awkward to individuals living in Western industrialized societies than to individuals living in traditional indigenous settings. A case study of technacy education delivered in the cross-cultural context of Aboriginal Australians in central Australia will be presented. The case study will highlight some of the difficulties experienced by mainstream Australian education agencies in coming to an understanding of technacy education, and will document the understanding demonstrated by indigenous students.

Technical education in Western industrialized societies

In Western industrialized societies, many scholars and teachers have devoted much of their time to analysing and debating the purpose of schooling. This of course was not always the case. The provision of education was traditionally the responsibility of parents and families and later, for some, the church. The context of human settlements generally dictated the things one had to know and to become skilled in, in order simply to live. What was taught by parents and their parents before them was sufficient. There was no pressing need to challenge conventional practices and thought. The economies, the social structures and the technologies of human settlements changed little.

During the nineteenth century, with the advent of the industrial revolution, Western societies began to change their human, technical and environmental dynamics, although some scholars have argued that the changes began much earlier when Benedictine monks introduced systematic work routines to mass-produce the Scriptures (Seemann, 1987). The rhythm of production was already in place and set human activity towards a greater degree of mechanization. The invention of the clock only helped to speed this process up. Time became a measurable commodity, divorced from the natural cyclical seasons and the sometimes chaotic patterns of nature. A growing proportion of people found themselves look-

ing towards a clock to regulate their activities and their production, rather than towards the patterns provided by nature.

The model of a linear sequential time interval soon became the backbone of modern education. To prepare citizens for industrial life they had to become productive. People were led to believe that to have self-worth they had to regulate their working day to achieve maximum productivity. People thus became organized as cogs and functionaries for industries (Seemann, 1987). The industrial, regimented work ethic became a measure of self-worth and soon found its way into education. Schooling began to emulate the factory. The school day was regulated by the bell. It could be said that these underlying patterns still prevail today, the only changes being in lesson styles and educational technologies. In many countries vocationalism has re-emerged, placing renewed expectations on schooling and technical education to produce economically productive functionaries.

The school systems of the industrial era presented the world as generally ordered into independent subjects. This pattern so characteristic of Western education sounded warning bells for some educationists. Dewey, for example, rejected the divisions of the curriculum, arguing that disintegrated school curricula produced disintegrated minds (Seemann, 1987). The divided presentation of knowledge deskilled the mind and reduced its capacity to make integrated judgements. The powers and structures of industrial economies were inappropriate to foster the development of integrated schema of social, cognitive and material experience. It could be said that people were expected to become efficient only in the short-sighted particulars. What was not fostered was the long-sighted integration of knowledge that is needed for the implementation of sustainable development strategies.

Western education thus has become a commodity of modularized, disintegrated learning. With the aid of science and technology, it has become more important to collect data and file it in databases than to make practical, integrated sense of it all. The current explosion of the information age into global networking will no doubt produce two fundamental effects, leaving a third wanting. One effect will be an increase in the demand for database software and pocket-sized hardware, while the second will be an increase in the tendency to extract convenient data from the huge pile of changing information in order to advance private or secular gains: a kind of self-satisfying pseudo-science. The third area left wanting will be the development of expertise capable of understanding the whole, extracting the essentials, and implementing new processes that are relevant, humane and sustainable in their outcomes.

With industrialization, education became instrumental in creating new social hierarchies. Managers of industry achieved higher status while workers on the factory floor assumed subservient roles, even if highly skilled. In the school too, when manual training in woodwork and metalwork was offered, it was quickly relegated to a lowly position and so became the preserve of the slower learners. The academically-oriented subjects became more highly valued. Literacy and numeracy thus became the cornerstones of Western education, while technacy was marginalized.

In effect, the human hand was perceived and represented in the curriculum as divorced from the mind and therefore less prestigious.

The separation in the curriculum of mind from matter was the antithesis of village education in pre-industrial Europe. For many villages, the most highly prized individual was the chief artisan such as the blacksmith, the carpenter, or the stone mason. Artisans were valued not only for their skills but often as a source of practical community guidance about social issues. The prowess of the artisan was deeply embedded in a social context that directly related to the natural environment from which his/her raw materials were derived. The artisan's prowess was necessarily defined by the interdependent relationships found in the social, technical and environmental context of the craft.

The transfer of technical education to other cultures

When Western colonization and invasion occurred, the education system introduced was predominantly based on literacy and numeracy. Ghandi once criticized the imposition of British education in India as a major contributor to the demise of rural India as a dynamic region of small cottage industries. Local innovation and small-scale rural productivity not only declined, but became less valued socially. Indigenous rural production was economically viable and was undertaken in a local social context that contributed to cultural maintenance. Technical activity and innovation defined Indian culture in many ways. The introduction of non-technical activity redefined the identity and aspirations of many Indian people. Ghandi, for example, noted that British education made Indians into bookkeepers and paper shufflers, tasks requiring numeracy and literacy.

When British colonization began about 200 years ago in the continent of Australia, one of the first effects for the indigenous peoples was the displacement of materials for hunting, tool reproduction and shelter (Talbot, 1991). Prior to the British invasion, indigenous Australian tools and trading lines across the continent were in a balanced technacy dynamic, which in turn maintained long-standing social structures.

Most remote indigenous communities today use the short-handled steel axe for hunting and gathering, and for crafting goods for the tourism market. However, when missionaries first handed out the axes to encourage church patronage, a ripple effect disrupted long-standing social structures. The axe was traditionally a man's tool. The prized smooth stones of traditional axes were tradable items linking local groups with trade lines across the country. For groups in the far north, the hardwood axe handle had to be traded from desert groups to the south as local woods were less suitable. Some men held particular status because of acquired skills as trade negotiators, and because they had established friendships across vast lines of trade. Skills of diplomacy in trade gave rights to men to regulate the axe. Women were not denied the axe, it was simply a very important survival tool, the men having primary responsibility for its care. Women had similar tools that defined their own roles. To gain a traditional education in the production of

axes was to develop social trading skills, technical knowledge, and techniques in assembly and selective extraction of local natural resources. One could imagine that the traditional knowledge that assured sustainable axe supplies for community survival was something akin to having passed through an education in technology. The present day antithesis would be for a school to teach a module that leads to the fabrication of a traditional stone axe without genuinely developing skills in trade negotiation, and the selective extraction of raw timber from the environment in a socially acceptable way.

When steel axes were handed out to uninitiated men and to women and children in the above example, the trading skills and social status of men changed. In time a new balance was achieved where all used the steel axe. But now, rather than having artisans to sustain local subsistence economies, indigenous Australians are dependent on receiving a cash income in order to buy, repair and sharpen their axes. In effect, from a sustainability perspective, they have taken a backward step. They have had to move from being technate to being technical. The steel axe without question is technically superior to the stone version, but there were no options open for people to incorporate the steel axe into their cultural context. While the axe is a relatively insignificant example, the principles of its introduction and effects could be replicated many times over in relation to other new technologies introduced to indigenous communities since Western colonization.

Western technical education introduced to indigenous communities was no different in its negative effects. Modularized, and taught as if technical skills are defined independently of the social and environmental contexts, Western technical education has had minimal impact in remote indigenous communities. In particular it has failed to provide them with local maintenance personnel who are able to service and repair equipment and machinery. In effect, the social lore of technology was not relevant to indigenous people living in small, remote communities. The community context was much different to that of the woodworking and metal-working rooms, and to the tools and organizational dynamics, of the technical training programmes introduced to indigenous Australian communities.

Rethinking technology education

The above analysis emphasizes the need to develop a totally new framework for technical education for indigenous people. Non-indigenous societies likewise need to reconceptualize their approach. There must be two outcomes to such a reform: it must be useful to the individual and it must be useful to the society.

Traditional knowledge has sustained the existence of indigenous Australian cultures for over 60,000 years. Technology and technical activity were inseparable from social and environmental knowledge. There was no basis to a technical knowledge framework that excluded social and environmental knowledge. To produce an artefact, a tool or a shelter was to integrate all three forms of knowledge. To illustrate this point, consider how women in small island communities in northern Australia integrate skills to produce *pandanus* baskets (or carry bags) for them-

selves. They organize a work group, with each woman having particular tasks, including food preparation and child care. They arrange transportation to a site in the natural bush to harvest the best pandanus trees. Harvesting requires a keen, informed eye to pluck the better leaves for weaving. Roots also are collected for dye. While this is taking place, children are encouraged to watch carefully as a learning exercise, not only in pandanus harvesting but equally in the social protocols and organization of the whole day. Some of the tools for manufacture of the baskets are fashioned by the women themselves while others are purchased.

The above story is very important. The technology of pandanus basket construction could not be conveyed adequately through a compilation of segregated competency modules. Yet much of the technical education that is being imposed on indigenous peoples is still based on an industrial world view that emphasizes the compartmentalization of knowledge through modularized learning. For women in the island communities of northern Australia, learning the technical skills of basket construction is necessarily a social event deeply embedded in sustainable human and environmental relationships. The whole exercise necessarily integrates social, technical and environmental knowledge and skills. To represent the pandanus 'curriculum' in a series of parts would be to misrepresent the quality of the integrated knowledge these women have developed. A disintegrated curriculum simply produces disintegrated judgements and hence inadequate solutions to the project or problem at hand.

In developing a new framework for the technical education curriculum, then, it is important to recognize the capacity of this area of knowledge to teach students how to think holistically. Their accumulated knowledge and skills from other subjects, and their personal life experiences, now can be given meaning in the one integrating medium of the technology curriculum. This assumes that the new framework is socially innovative, and that technology education maintains a link between learning and its application in the community. Given an adequate model, there is the potential for technology education to be an enabling and empowering medium for students to integrate their cognitive, psychomotor and affective capacities, thereby enhancing their ability to make holistic judgements that lead to holistic practice.

In our own experiences with indigenous Australian technical education, some theoretical and practical problems have had to be overcome. The first was the conservatism of Australian industry. Industrial unions initially were concerned with the protection of their particular trades. Although this concern has faded during the past five years, it is still a battle in the political arena to promote successful new models in technical education, particularly amongst technical educators and mainstream educational funding bodies.

The second constraint has been the language embedded in the mainstream technical education curriculum. In Australia, the English lexicon is reasonably well-equipped to name most finite bits and pieces of the world. We seem very capable of finding names to describe parts. However, we do encounter problems in assigning names to integrated concepts and modes of practice. In technology edu-

cation, for example, we find people talking of technological literacy, which seems a very obscure expression. When indigenous Australians attempt to relate their community development concerns to the broader Australian community, many of them find that non-indigenous Australians either do not understand their message, or react to their requests with too much emphasis on the details. The spirit of the proposed programme is lost once it is processed through centralized legal and accounting procedures.

A third problem has been the lack of a simple, understandable model to help teachers and students to integrate holistically in design or problem-solving processes utilising tools, material forms and spaces, and techniques. Another problem has been the major constraint of simulation where the teacher, or a computer, attempts to replicate a problem or task in a classroom, while all along it is happening naturally outside the school. Learning to respond to the rich unpredictabilities of real life events provides a good environment for developing holistic skills.

Out of the above issues developed the core educational model that is now becoming known as technacy education. Technacy is a simple but powerful holistic model developed to accompany design processes in technical and general education. It is a model that, in effect, advocates that all technology practice is grounded necessarily in the dynamic interaction of its social, technical and environmental states. These three elements of technacy become both the resources and the constraints of all technical activity, and thus together their dynamic defines much of human knowledge and existence. The idea is to move the student on from developing his/her technical skills, to becoming technate. Developing one's technacy skills is as much an art as a science. We can parallel this argument in literacy and numeracy education. Just as there are levels of competence in literacy from writing one's name to writing profound poetry, and in numeracy from adding a few numbers together to compiling a fundamental formula in physics, so too there is a range in technacy from being skilled in joining materials together or repairing equipment to being innovative in the design and development of appropriate technologies and systems.

Put simply, technacy is holistic technology problem-solving, communication and practice. It is a view that perceives technology practice as value-laden. The utility and appropriateness of technologies are defined by the end-user in the local context. Technacy can be argued to be the main art, skill and knowledge of appropriate technologists.

First principles of technacy: a theoretical proposition

The theoretical model underpinning technacy has one side of its 'ancestry' linked back to Hegel, Feuerbach, Marx, Dewey, Wortofsky, Schumacher and Ihde in Western societies (Seemann, 1987). On another side its 'ancestry' is linked back through the social learning styles and knowledge frameworks of indigenous Australians, and probably of many other indigenous peoples (Walker & Seemann, 1990).

Technacy is based on a three-way 'dialectic' of necessarily interdependent parts. These are the human, technological and environmental ingredients of any technical undertaking. Each part both defines and therefore requires the other two parts. No pair can be adequately defined without inclusion of the third part.

The notion of human consciousness and social organization, and indeed of human existence, proves to be an inadequate proposition as a self-defined thesis. Human existence finds its definition in the manifestation of human technology knowledge and social material practice. However, the human technology dialectic also proves inadequate as both are partly defined by their natural environment. Humans cannot exist without drawing energy from and manipulating their natural environment. Technology software (knowledge of such fields as economics, science, computer programmes, social science) and hardware (forms and spaces including equipment, tools, houses, farms and settlement infrastructure) cannot exist without the same.

The technology-environment dialectic is an inadequate proposition as neither technology nor the environment gain their definition entirely from each other. They both interact with humans. While the environment could be argued to exist without human involvement, at issue is the definition of human knowledge and technical practice. It is thus academic to debate the independence of the environment from human existence or human technology when our concern is to understand and define the universal concept of human technical activity. Put crudely, the concern for human technology practice, and so for education, is only relevant where humans exist, intend to exist or can apply their technology.

The technacy model contrasts, or complements, one particular idiom of Western logic: Venn's logic of intersecting sets. If we represent the three context factors of the technacy model as 'human context factors', 'technological context factors' and 'environmental context factors', they would look like Figures 1A and 1B.

FIGURE 1: A. The model of a world where the parts are initially perceived as independent sets; B. The model of the integration of independent sets showing integration pairs A, B and C, and full integration at M (M = region of mutual integration).

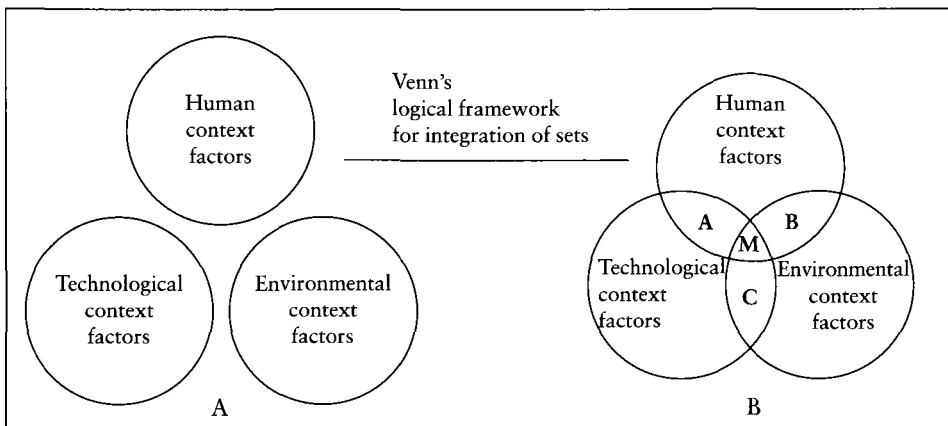


Figure 1A is a representation of a view where the sets intending to be integrated are in the first instance perceived as disintegrated, or as independent and self-defined. This is consistent with much Western logic where we tend initially to consider a problem or task as being made up of independent sets or parts. In effect we disintegrate a problem when we analyse it as our initial course of action. At this point, many of us can get lost in the detail and fail to see the overall outcome or solution to the problem we are addressing. We often lose our focus. We then attempt to put together a solution and specify a response. But in Figure 1B, the integrated solution, 'M' is not consciously or necessarily the outcome. It is possible to ignore one of the sets and produce a solution only integrating in A, B or C. Thus 'eco-tech' solutions (green technologies) could focus on 'C' outcomes, ignoring or making gross assumptions about the human, social or political consequences or benefits of their actions. Socially sensitive technologies at point 'A' risk ignoring or making gross assumptions about the environmental consequences or benefits of their actions. And socially sensitive natural environment projects at point 'B' risk ignoring or making gross assumptions about the technological consequences or benefits of their actions. Judgements in the past made in the areas of A, B or C exclusively have quite possibly been misjudgements.

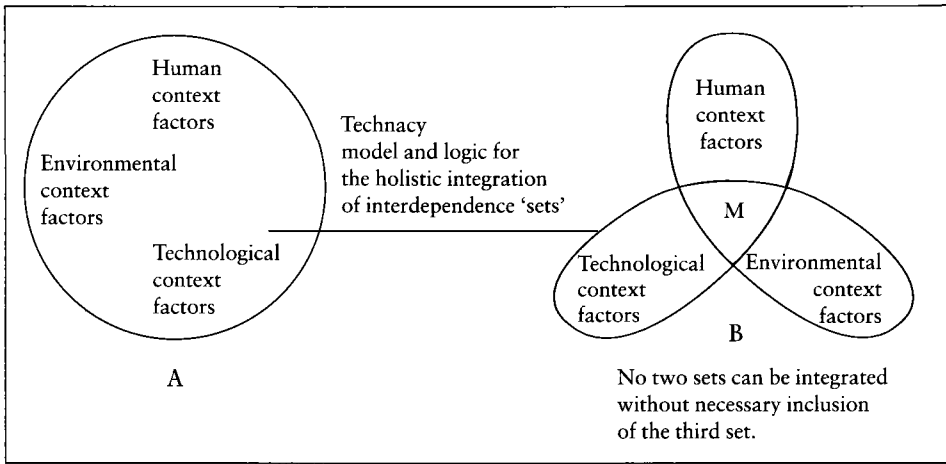
The technacy model outlined previously argued that the triad is essentially interdependent. If this proposition is true and relevant for human technical practice, how can it be possible to produce solutions in A, B or C exclusively? Indeed, how can it be possible to represent the three interdependent 'sets' within the predominantly Western logic of Venn's figure from 1A to 1B in the first instance? The proposed solution is to develop a new model to represent the holistic integration of interdependent 'sets', as shown in Figure 2A and 2B. The old Venn framework is plainly limited, not irrelevant, just limited.

The technacy model in Figure 2A and 2B is only a model, but we consider it a very useful one. Its purpose is simply to guide conceptual development and holistic technical education practice. However, it does show how Western Venn logic has limitations in its capacity for guiding true integrated technology practice: i.e., for the attainment of 'M' solutions.

Figure 2A shows that no one aspect of human technology practice can be defined and analysed without necessarily including the other aspects. Holistic technology practice exists at 'M'. Holistic technology education therefore must foster the capacity to function creatively in 'M'. Thus, technology practice and technology education have their performance regulated by how well they have been tailored to the human, environmental and technological contexts of the end-users of technologies and technical training programmes.

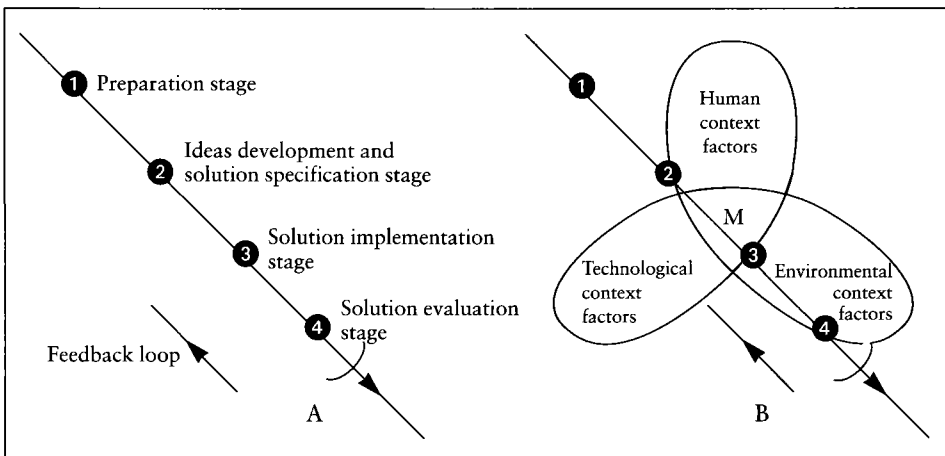
The technacy model for guiding curriculum and educational practice is static on its own. There have been four major developments in technacy education, all resulting from the input of indigenous Australians. The first development was to embed the technacy model in all stages of designing and problem-solving education. The design process has been analysed in many texts for its educational value, but was missing a framework to guide students and teachers in their efforts to

FIGURE 2: A. Model of the world where the parts are initially perceived as members of a whole; B. Model of the holistic integration of interdependent sets showing integration at M.



design and produce holistically-integrated solutions: hence the technacy model. Figure 3A provides a model of the stages one progresses through in the course of designing. In real life, designing is much more of a chaotic exercise with designers naturally jumping backwards and forwards in the design process, for designing incorporates individual creative thinking patterns. Nevertheless, the model of the design process adequately represents the overall logical sequence of the art and science of designing. Figure 3B shows how technacy underpins all stages of the design process. This ensures that technacy education is focused on the development of holistic technology practice.

FIGURE 3: A. Basic problem solving and the design process; B. The technacy model is written into every stage of the design/problem process to foster holistic technology problem-solving skills.



The second development was to organize the application of technacy education around the functions in remote settlements that determine their viability and utility. A study of several remote indigenous communities across central and northern Australia showed that most of the technical breakdowns in communities that are often linked to poor health environments occur in five key settlement functions: water, waste and sanitation, shelter and space usage, transportation and communication. Each involves a particular social and technical dynamic for its maintenance and development. These five settlement functions were consistent across all communities. They became the five strands of the technacy course that feature in the new curriculum. All students have to practice their design and problem-solving technacy skills with projects in all of the strands. In this way they will gain broad experience of how their community functions from a technacy perspective. Energy, like economics, was seen to transcend all these functions and so was classified as part of the hardware and software of the technacy model. Learning about energy only has value when it is applied to something meaningful such as transport, shelter or communication technologies.

The third development was to make the curriculum *project-based* rather than *tool-specific* based for learning outcomes. The latter skills were included throughout the course but only on an 'as needed' basis determined by the students, in collaboration with their educators and occasionally with their communities. The process of undertaking applied technacy design projects in water, for example, required students to identify a project that was meaningful to them and where possible to their home community.

One student identified his grandfather's traditional land in the arid zone of central Australia as needing a more sustainable way to store rainwater. The student was aware that he could have gone to a retailer of fibre-plastic rainwater tanks, but decided against it. Considering the technacy model, he argued that *technologically* such a tank would be difficult to repair out in the bush should it be damaged, and that fibre-plastic technology was much too expensive for the scale of the local economy at his grandfather's camp. *Human* issues included a desire to keep skills in the camp and not have outsiders coming and going all the time to install and repair the tank, leaving no reusable skills behind. *Environmental* issues included the fact that the land at his grandfather's camp was sparse, with little timber, but had plenty of desert sand. He grappled with several ideas and finally decided he wanted to try and construct a ferro-concrete water tank using 'bush sand' from the camp site. He had no skills in cement mixing and as a result the educator included in his learning experience a short module dedicated to cement mixing techniques. The end result was a very functional and locally repairable water tank for his grandfather. The student had commenced his journey of empowerment in holistic technology practice through the production of technologies appropriate to his grandfather's particular context. It should be noted that the student not only gained skills in specific technical processes, but also in the overall organizational skills required for getting the job done in a culturally, technically and environmentally appropriate way.

The fourth and most recent development has been to structure the technacy and applied design course in an overall career path that maximizes local knowledge yet links to other courses. The technacy course was earlier given the name of the Aboriginal Technical Worker programme. This has since been abbreviated to the ATWORK programme. It has many parallels to community health worker programmes, but essentially provides primary technical care for the physical aspects of communities. Graduates are known as ATWORKERS and now have a four-level training and career path to progress through if they so choose. The highest level is technology-management oriented, with the option to specialize as a community educator in technacy. The certificates are nationally recognized across Australia and lead to a qualification in 'Applied Design and Technology'. The basic focus is on applied holistic problem-solving in technacy, and on the development of appropriate technological solutions to community problems. The ATWORK course differs from the conventional output of technical training in many ways, an important one being its emphasis on appropriate solutions as an outcome, rather than on a technical skill as an input.

The ATWORK programme: a case study in technacy education

The ATWORK programme delivers technacy education by and for indigenous Australians. The programme is run by the Centre for Appropriate Technology (CAT) in Alice Springs, which is managed by an indigenous Australian board whose membership is representative of central Australia and of CAT operations. The CAT functions as a non-governmental organization dedicated to the research, design, development and teaching of technologies appropriate to remote communities. The organization is often involved in pre-feasibility studies for Australian government aid projects and programmes for developing countries including Africa, China, Asia and the South Pacific.

The ATWORK programme at CAT is the mainstay of three of the indigenous councils in central Australia, with a fourth council seeking to access it in the near future. The ATWORK course has only been available for two and a half years yet has attracted considerable interest in this short time. Most students take eighteen months to complete it although some finish sooner and others later. It is the first and so far the only nationally-developed technical vocational curriculum targeting indigenous community needs in Australia.

The educational goal

The aim of the ATWORK programme is to develop students' practical skills and self-confidence, and their awareness of technological options and applied design and technacy skills that support and influence indigenous Australian community functions and lifestyle choices. Considerable effort is directed towards imparting skills, knowledge and techniques that enable students to participate in taking con-

trol of their community technologies through an understanding of the natural, constructed and social context in which the technology exists. This is achieved through:

1. Course modules that are community design-project driven; students draw their learning resources from the actual issues, problems and developments taking place in their own communities;
2. An emphasis on the integration of a variety of technologies, materials and cultural knowledge in order to produce appropriate responses that actually support community functions and cultural activities;
3. Giving students skills in identifying, preventing and solving technological problems in their communities; i.e., preparing them to become practising, applied designers who investigate problems of a technological nature and take steps directly to make judgements and changes regarding the choice and design of technologies that support their chosen lifestyle.

The course is therefore directly involved in supporting the process of community development through technological empowerment with technacy education.

A student project example of technacy in practice

As part of the waste strand in their training, a group of students negotiated to investigate the problem of flush toilet breakdown in a selected number of communities. They followed the design process (see Figure 3A) and spent considerable time and effort in the preparation stage. While in the field, they spoke to the people using the technology, checked with the local plumber, and followed up with those involved in the administration of such infrastructures.

The students' initial response was to react in a technical way by suggesting certain repairs and maintenance to be carried out. In other words, their initial findings and responses reflected only the technology aspect of the technacy model and ignored the people and environmental aspects or constraints. They therefore were sent back to take a more holistic look at the problem. They were encouraged to find out more about the human side of the problem, and especially the cultural and social issues at play, and the knowledge possessed by the user group of the flush toilet technology. They also were expected to understand the environmental constraints such as the location of the toilets, their distance from the nearest service centre, their exposure to the elements, and whether they were for public or private (i.e. home) use.

Following the more holistic path of the technacy model, the students discovered that the main problem related to cultural/social factors: apparently, some short-term visitors from other remote communities, while under the influence of alcohol, carelessly misused many of the toilets. This situation would occur from time to time. The students became aware that the problem had mainly human and environmental constraints and therefore demanded more than just a technical response involving repair work.

Once the problem had been clearly articulated, the students set about developing ideas and design options. They responded in a variety of ways. They experimented in both technical and social ways by strengthening and modifying parts of the toilet, and by developing an education programme. However, given that there was a need to respond quickly to the issue, most efforts were focused on developing innovative ways to strengthen and protect the existing toilet technologies in ways that were acceptable to the local community council.

The required educational outcomes are not necessarily achieved through assessment of the final product (or solution), but more through ensuring that the design and technacy processes have been demonstrated by the students. Quality of the designed solutions is achieved through the integration of technacy into the design process combined with the integration of the students' own skills, knowledge and values. While the design and technacy processes are important it should not be forgotten that valuable technical training also occurred during this design project. Technacy and the design process gave meaning to a selected range of conventional technical competencies. Students learned measuring and marking-out skills (numeracy), rapid graphics and interpersonal communication skills (literacy), plumbing skills, sheet metal skills, material planning and purchasing skills (basic budgeting) to name just a few.

Conclusion: a creative leap from convention

This paper has argued that the evolution of Western education generally, and technical education specifically, has not moved beyond the compartmentalized and mechanistic delivery of knowledge. Indeed, in recent years, with short-term vocational pressures, ever more finite divisions have been introduced to the curriculum. This disintegrated model has been transferred to other cultures during colonization. Most of these transfers have yielded little benefit to the recipients, and very often destroyed their ancient stock of techniques, knowledge and wisdom.

Educational reforms have done little more than rewrite curriculums that are perpetuating the compartmentalization of knowledge. Most curriculums appear crowded, disintegrated and directionless. Many students are unable to see the overall value of their accumulated knowledge and wisdom for they have become buried in a mass of modularized learning. Technacy education acknowledges the useful role of modularized learning, but couches this role in a universal curriculum model that seeks to begin and end learning with integrated education applied to the real world. It seeks to develop holistic integrators. Rather than simply adding to or rearranging the curriculum, we argue that the curriculum needs to be rebuilt on an alternative foundation using holistic learning that is responsive to community needs. Theoretical understanding is essential in the new curriculum, but we believe that a good theory is also a practical one!

There is a missing element in basic education. For many years literacy and numeracy have been the cornerstones of Western industrialized education. Many people have questioned the adequacy of this cornerstone for the new technological

age. In addition to literacy and numeracy there are basic skills in technology and problem-solving which are required to support a technological lifestyle. The need to reform the understanding and practice of technology education is just as urgent in Western industrialized societies as it is in developing countries and indigenous communities. Wherever an educational programme exists, there too an education in technacy should exist. Where technacy does not exist, or where conventional technical education or design process education is active, there should be an overhaul of the quality of the judgements derived from such programmes.

The most developed literacy and numeracy programmes will provide neither the skills nor the rounded judgements necessary for an integrated approach to technology. Nor will the most effective technical training programme yield people capable of producing appropriate and locally sustainable innovations. Somewhere these programmes need to re-orient themselves towards an education in technacy. Technacy education is in its infancy. It works well, but there is a long way for it to go before educators find a consistent method to teach others how to integrate holistically, and how to gain competence in holistic technology practice through technacy. There is a need to generate a new universal curriculum. There is a need for a creative leap from convention.

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IN CONCLUSION:

QUESTIONS OF CULTURE

AND EDUCATION

Angela Little

Many analyses of the relationship between education and culture treat culture in one of two ways. Either it is seen as a set of pre-existing attitudes or factors which mitigate against the functioning and processes of the school, or it is seen as something which is reproduced among the younger generation by the school. In both cases culture is regarded as an entity, bearing either an antecedent or consequent relation to the process of education. In both cases culture conveys a slightly negative message. Either culture holds back, prevents or slows down the goals of the educator and educational institution, or the educator and educational institution are servants in the maintenance and reproduction of pre-existing cultures, which in many instances are judged by the outsider to be stagnant and regressive. Culture, broadly defined, is invoked as an explanation of failure rather than success, of problems rather than achievements, and as a predictor of future difficulties rather than future possibilities.

The papers in this volume reinforce aspects of these dominant concepts. Yet they also move us in significant ways, towards an alternative conception. All focus on the processes of in-school and out-of school learning. Both types of learning are viewed as activities which occur within cultural sub-systems, some of which may conflict with each other. In almost every case, culture is imbued with a dynamic rather than a static quality, with a history as well as a future. The development of a cultural identity is posited as a central outcome of the learning process. But it is recognized that the shape and form of that identity is moulded through different

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and sometimes competing learning contents, processes and goals. The shape and form of that identity may be determined to some extent by the nature of the economic and political power relations between the stake-holders or major players in the learning process (the educators and learners), and by the learning systems.

Relativism and excellence

In general, the authors are non-judgmental about the value of the alternative learning contents, processes and contexts. They highlight similarities and differences (and in some cases conflicts) between the contents, processes and contexts of alternative learning systems. Their focus is on the process and outcome of learning, with the implications of learning for the formation of cultural identity; they are also concerned with the fusion—or not—of learning systems. They are concerned with understanding, rather than imposing value on, the various contents, processes and contexts of the systems within which learners, especially young people, learn. At the same time, some of the authors acknowledge the value judgements made by educators and learners about learning performance *within learning systems*. In his description of the *Melpa* learning system, Michael Mel identifies salient concepts of knowing and learning which underpin the learning system experienced by all children. Some children attain 'a good level of language' and are able to articulate better than others, implying that standards of excellence are valued, and are intrinsic to the learning system. This point is important for those who regard the consideration of alternative systems of learning as a relativistic mind game in which all forms of learning are assumed to have equal value, irrespective of context. To acknowledge the co-existence of alternative learning systems is not to acknowledge that all forms of learning have parity of status. Clearly there are standards of excellence *within* learning systems. And, plausibly, there are standards of excellence *between* them. The general issue raised by many of the authors is not whether one system of learning is more excellent than or superior to another; but rather, in which settings and contexts are aspects of one system likely to be more excellent than aspects of another?

Learning within and between learning systems

The focus on learning within cultural systems also reminds us that learners everywhere (not just in indigenous cultures) experience disjunctions and conflicts between themselves and educators, between familiar content, processes and contexts and the unfamiliar which the educator offers. Any analysis of learning from the learner's viewpoint needs to address the processes of exchange between the learner and educator within one or more cultural learning systems over time, and the congruence or disjunction between those experiences, arising from the characteristics of alternative learning systems. Young children worldwide experience a disjunction between the familiar and the unfamiliar within the home, as well as within the school. They also experience a disjunction between the content, pro-

cesses and contexts of learning experienced in the home and those in school. These experiences, I would suggest, are fundamental to the processes of learning in any society. If there were no gap or disjunction between what the learner knows and what the educator wants him/her to know, then the possibility of learning would be severely compromised. However, the articles in this issue underline the *extent of the gap* between the contents, processes and contexts of learning among children growing up in indigenous communities. Where a formal system of learning has been imposed or transposed from another setting, then the gap between it and the indigenous alternative is likely to be wider than that between alternative systems of learning arising out the same context, for example as between home and school learning in an industrialized country. The following questions arise: does the depth and nature of the gap between alternative learning systems facilitate or inhibit effective learning in one or both systems? Does the depth and nature of the gap encourage ritualistic rather than meaningful learning in one or both systems? Does the depth and nature of the gap influence the types of creative fusion and synthesis possible between systems?

Fusion, synthesis and selection

Fusion and synthesis is the underlying theme of John Lowe's account of Solomon Island students' world views which draw on three learning systems—traditional and indigenous, Western science and Christianity. Although a number of 'disjunctions' and incompatibilities between notions derived from each may be identified, these disjunctions are not necessarily 'dysfunctions'. In other words, students of science retain much of their customary and familiar world view while appreciating the new and unfamiliar view that science offers. Science opens new horizons without losing sight of the familiar and traditional. Students develop strategies to deal with incompatible visions. Students appear to develop a capacity to be selective in what they accept from Western science, and in choosing when to use it. However, as he points out, this strategy of selection is not unique to Solomon Island students. English school students also use scientific concepts in the context of school science, but may switch to an alternative set for 'life-world' purposes.

Forms of interaction between learning systems

Most of our articles examine relations between what are termed indigenous learning systems and formal school learning systems. In every case those relations have been underpinned by inequalities in political power and economic status, and characterized by the domination of one system over another. Formal school learning systems have been imposed on a people by colonizing powers. The formal school learning-system has been designed to 'civilize' indigenous populations and to open avenues to alternative and higher economic status. Indigenous systems have been ignored or deliberately undermined.

The counterpoint of 'Western' systems of learning with indigenous systems has been described by a number of writers. Bude (1985) for example, contrasts the didactics, learning fields, learning orientations, content and methods of traditional black African education and Western style primary school education in Africa. Teasdale (1990), building from Christie (1985), contrasts the informal learning strategies of Aboriginal societies with the formal learning strategies of Western schooling, and begins to explore the fusions that sometimes occur through their interaction. The articles in this issue maintain and develop some of these distinctions, yet they encourage us to extend and refine our thinking about the range of cultural sub-systems of learning and the range of relationships between them.

Several cultural sub-systems are described herein. First, there is the school with its learning content and processes. While several of the authors refer to 'Western systems of learning' it is important to recognize the range of Western spheres from which these systems derive. At least four spheres—Spain, the United Kingdom, Germany and the Netherlands—are alluded to in these papers. Their influence has been exerted sometimes through religious missionary bodies, and sometimes through agencies of the national or colonial state. Western systems of learning may share a number of characteristics; but they also differ in important respects. The second cultural sub-system is that of indigenous learning systems. While many of the authors refer to systems of knowledge outside the school, most overlook the distinctions between them. Indigenous learning systems may be informal and confined to everyday learning. Or they may be more formal, involving structured learning contents and processes. Examples of the former include the learning routines of economic survival described by Avinash Singh among the Ho, or the learning of explanation through appeals to magic as described by John Lowe among school-children in the Solomon Islands. Examples of the latter include initiation rites, and schools based on indigenous religions and knowledge. Few of the papers describe these more formal structures of indigenous learning.

Once the range of cultural sub-systems available to the learner has been described, we may move on to consider the forms of interaction between them. The following descriptions of five sub-systems may prove useful to readers.

1. This includes several of the settings described in this issue, the first of which is the domination of indigenous systems by metropolitan models, imposed through colonial, neo-colonial or internal colonial power relations. This type might be sub-divided into the following: (a) indigenous systems based on oracy dominated by systems based on literacy; (b) indigenous systems based on literacy dominated by other systems based on literacy. A further sub-division would distinguish formal from less formal indigenous systems.
2. A second type of interaction might be described as cultural hegemony in which a powerful country may, even in the absence of formal political control, exert influence on the structure and functioning of the formal education system of another country, which in turn has implications for its relations with indigenous systems. Financial aid and loans from foreign donors to education carry implications for the forms of cultural exchange between educa-

- tors and the modelling of one system on another, through textbooks, consultancy and training.
3. A third type is voluntaristic borrowing or modelling, in which policy-makers or educators deliberately select and adopt policies and practices from elsewhere, even when there is no political or economic obligation to do so. Contemporary examples abound (Phillips, 1989; Taniuchi, 1986). Zane Ma Rhea's account suggests that active selection and adoption of external models and practices characterized the historical development of learning systems in Thailand.
 4. A fourth type of interaction occurs when people migrate from one set of cultural sub-systems to another, importing, maintaining and developing some of them as they move, and bringing these to bear on their participation in education systems in the host country. Unaisi Nabobo and Jennie Teasdale allude to this type of cultural interaction when they describe the historically transposed culture of Fijian Indians.
 5. Finally, a fifth type may be described as that of mutual co-existence, with a separation of learning domains. Some of the work on Aboriginal education in Australia described by Peter Gale alludes to this form of interaction. It might be sub-divided further into (a) mutual co-existence, which provides access to the knowledge resources of a second system in order to empower, transform and preserve the first; and (b) mutual co-existence which provide participants in the system access to the knowledge, resources and qualifications which provide the passport to full participation in the second. Sheila Aikman's account of Arakmbut attitudes to the local Spanish-medium school provides a good example of the former; and John Lowe's account of student participation in science learning in the Solomon Islands, a good example of the latter.

Language and literacies

So far we have discussed systems of learning based on oracy and literacy, and have discussed some of the forms of interaction between them. The match or mismatch between spoken and written forms of language, is a fundamental characteristic of all forms described above. Most of the articles in this issue describe learning systems employing different oracies and written literacies. Most describe the learning of and exchanges between these literacies as mediated by educators, elders and community members. Increasingly however, written texts and the spoken language in indigenous communities are being augmented by visual literacies mediated by technology—TV, video, CD-ROM and computer software in general. Not only is this software designed in contexts remote from most indigenous communities, but it is increasingly used in learning settings outside the formal school system. What effect will technology have on the nature of indigenous learning systems, on the types of interaction forged between alternative learning systems, and on the separation or integration of learning domains?

Single and multiple identities

Finally, a note on cultural identity. Many of the articles place the development and maintenance of cultural identity as central to the process of learning and to the development and transformation of cultures. Few of the papers address directly the learning of multiple or multi-layered identities as distinct from the learning of a single cultural identity. In remote indigenous settings with little cultural exchange, the development of a single cultural identity may indeed be an apt description of identity formation. But in settings where people are mobile and/or where there is considerable interaction between learning systems with different and sometimes contradictory goals, contents and processes then the possibility of persons developing or aspiring to develop several integrated or separated layers of identity should also be considered. The questions of culture which then arise are: under what conditions does the formation of identity within a primary cultural system contradict or reinforce the formation of a further identity within a second? Who controls decisions about the content and goals of alternative learning systems? Do those who design learning systems remote from the contexts of use have a moral responsibility to understand how those systems are used, how they interact with alternative systems, how they affect the formation of cultural identity and how they may become more sensitive to context?

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TRENDS / CASES

GEOGRAPHY TEACHING

IN THE TWENTY-FIRST CENTURY

Antoine Bailly

Human beings, frail creatures of the earth, have only one real tool adapted to the vastness of the spaces with which we have to grapple: the mind (Ratzel, 1988).

What is the purpose of geography?

For a long time, geography remained detached from the turmoil that prompted the social sciences to seek new status; until the 1970s it even avoided involvement in the great ideological and educational controversies. Resolutely empirical and concerned mainly with the description of countries and their ways of life, it was a means of imparting the geographical knowledge necessary to enhance the image of the nation-State and its colonial ramifications. For the great geographers of the French School, such as Vidal de la Blache, who for more than fifty years had a profound influence on geography curricula in French-speaking countries, 'geography is the science of places not of people', and its object is to describe the earth and the relationship between nature and various human ways of life. The main component of geography teaching is the natural environment, with its land relief, morphology, geology, pedology, climate, vegetation and all the specific features whereby a natural region may be identified and regional geography developed—a real idiographic

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discipline based on detailed knowledge of the history of the regions and their human settlements.

In every country seeking to enhance its national status, there was only a short step between teaching based on the regions and teaching focused on the nation-State, underpinned by principles of identity. This function of geography is generally accepted, as otherwise future citizens would have no knowledge of their country and its administrative units. Indeed, teaching locations and place-names by order of administrative importance makes it possible to find one's bearings and mentally organize a world which is often unfamiliar, but the scientific limits of this type of approach are soon reached and the only way of assessing knowledge is in terms of the number of place-names memorized—an objective which geographers can hardly find satisfactory.

The rediscovery, through the new geography at the end of the 1960s, of other possible approaches, particularly those based on deduction and measurement theory, marked the beginnings of a fresh line of inquiry. Quantitative geography, sometimes described as 'neopositivist', began in the United States—first of all to contest the theories based on morphology and identity. Human landscapes are first and foremost a reflection of economic and cultural patterns. To focus on them means to set aside the realm of human/environmental relationships and to perceive spatial patterns through the values of societies and the similarities in spatial organization and practices. Geography becomes a nomothetic science which seeks to schematize and build up theories.

Sociology and psychology were not to exercise their powers of seduction on academic geographers until the 1970s. In French-speaking Europe, they gained ground by dealing in concepts, such as the subjective experience of space, and instruments, such as the mental map. This was the geography of perception, soon to be known as geography of representation which was to embody this idealistic conception of the discipline. The question of the very purpose of geography is raised: should it consider the social and psychological realm as well as the morphological and economic domain? Should it inquire into individual as well as collective human behaviour?

Seven questions for geography

This new geography raises seven major questions: where, how far, how much, who, to whom, how, and why? These inquiries are designed to clarify locations, i.e. expressions of spatial choice (or non-choice) on the part of groups which, by their habitual conduct, make use of space. They assign to geography the task of analysing what these groups produce in terms of the resources available to them and the skills that they have acquired.

This type of geography endeavours to identify the links between physical and human geographical space and economic, cultural and social life, by proposing models that give a systematic set of explanations. Studies are being carried out on an ever-wider scale—local, regional, national and international—and the inquiries

are becoming more complex—the impact: of distance on location; of hierarchies and centrality on spatial organization; of people's imperfect representation of the world on their geographical decisions; of the imagination on spatial organization; and so forth. Geography thus moves into the realm of both the humanities and science. Its purpose is to analyse from different angles the way in which societies live, group themselves, adapt their environment, picture themselves and strive to make use of space.

This geography draws on a range of knowledge, based on the study of processes rather than that of pre-established administrative hierarchies. Who would have thought, before 1986, that the name Chernobyl would have become part of the curriculum? It is essential to take as a starting-point the spread of pollution, the unpredictable path of the radioactive cloud blown here and there by the wind, in order to examine its impact on economic and social activities. By learning new geographical skills, pupils will succeed in understanding the great spatial processes, describing them in words, drawings and statistics and generally explaining them. They will grasp the impact of distance and of geographical scale on human organization, as well as the influence of representations on the significance of places.

The teaching of geography must focus on fundamental concepts and their extensions, as set out in Table 1.

TABLE 1: Geographical questions and concepts

Questions	Concepts	Extensions
Where?	Place	Latitude and longitude Site
How far?	Location Territory Environment	Limit Frontier Natural hazard Topophilia Political implications
How much?	Quantity Measurement	Distance Scale Density Flow Population Duration
Who and to whom?	Identification	Strategy Human risk Demography Interaction
How?	Representation	Development Information Quality of life
Why?	Understanding Analysis Explanation	Socio-economic and spatial explanations

The teaching of geography is thus based on the gradual assimilation of a series of fundamental concepts which are themselves progressively renewed. The old story of agricultural production has been set aside in favour of a series of basic

concepts which are essential for situating pupils in a structured pattern of space and time, whatever their level of representation. The key to this geographical project lies in the use of a series of elementary structures in spatial organization, structures which are first presented to young pupils in a simple way and then developed as the pupils progress.

Mobilizing the pupils

Pupils will embark upon this geographical learning process only if the subject can bring out their potential. It is by stimulating the pupils' senses, as their ability for spatial visualization develops, that this introduction takes place.

Geography—like other subjects—must take account of work in cognitive psychology which explains the spiral progression in spatial learning, first in relation to parents, then in the home, district, town, region and country, etc. Psychological research on the spatial dimension and child development enables us to emphasize the mutual influence between people and their environments. From individual, personal space, which is almost like a 'private bubble', to social space, which is the realm of social relations (in a district, town or country) and even to more distant, less familiar space, the environment is ever-present in our representations. Space constitutes a matrix for social existence, a mediation in the midst of which the child develops.

Spatial organization takes place in a proxemic progression, from the near to the distant. The importance of events and of people diminishes as our perception of them decreases with distance (unless we are particularly well-informed about distant situations, for cultural reasons or because they are in the news). One of the first forms of spatial contact is the pupil's exploration of a new school or a new district. Knowledge of space is acquired through subjective impressions which are built up gradually. Children evolve in the way in which they represent space, moving from topological space (qualitative relations of neighbourhood, and separation, of envelopment and detachment) to representative and figurative space and then to projective space.

It is by gradually revealing each pupil's capacity to visualize space and time that geography becomes a stimulus for all those who, having become active participants, can create, re-create, explain and organize space. The imagination is caught by this mental construction which brings into play all the pupil's senses, not only sight but also feeling, smell and touch.

The teaching of geography aims to develop pupils' capacity for observation and reasoning, and to arouse their interest in spatial problems. It must teach them to observe (description), to classify (establish typologies), to create links between phenomena (the global approach) and to provide explanations (in particular through deductive reasoning). In order to do this they must acquire methods: reading documents and representing geographical phenomena, by means of sketches, diagrams and maps.

Teaching can thus bring out the problems of human/environmental relationships and hence the need to protect the environment in order to ensure quality of life, to enhance the role of spatial imagination and subjectivity in spatial activities and to organize spatial knowledge. The 'Geography for life' programme of the Association of American Geographers, which provides teaching centred on themes, such as the relationships between individuals, places and environments, taking into account territorial attachments and physical and human systems, represents the didactic culmination of this type of approach. And geographers may now talk of territorial development with reference to three principles:

- the principle of territorial equity, which implies a preference for egalitarian spatial patterns instead of the metropolis-periphery dichotomies resulting from economic forms of reasoning and centralization;
- the principle of sustainable development, designed to preserve the ecosystem and thus protect the future;
- the principle of territorial responsibility, conferring upon inhabitants an essential role in the development of their living areas.

Crises occur in societies when these principles no longer correspond to human values. A geography which could not command respect for these principles would reflect a soulless and landless society, and would lead to rootlessness and a lack of coherence, as in the case of societies without territorial attachment, incapable of setting up deep and complex territorial relations, preserving the relics of their past or planning their future. It is for geographers to put across this simple yet essential message for the future of humanity.

Conclusion

At a time when transnational communities are being created which extend beyond the confines of regions and nation-States, geographers are questioning the very foundations of their discipline and their function in society. Not only do they no longer avoid acknowledging their role in the transmission of spatial, regional and national identity, but they no longer act solely within the framework of the nation-State. The juxtaposition of local and world considerations prompts them to embark upon new inquiries tending towards the teaching of a conceptual and topical geography which can mobilize pupils and teachers alike according to broad social, temporal and spatial principles.

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HIGHER EDUCATION AND GENDER

ROLES IN JAPANESE SOCIETY:

AN ASSESSMENT OF DISPARITY

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With the revision of the Family Law in 1947, a major educational reform was carried out in order to improve the position of women in Japanese society. This legal and educational reform transformed the social norms and behaviour of women which, until then, had been fixed by the traditional 'Ie' [family] system and reinforced under the pre-war education system.

Since the reform the number of female students studying at both national and private four-year institutions of higher education has been increasing. Furthermore, the ethic of egalitarianism has had a major effect on post-war Japanese education. Thanks to the egalitarian transformation, women have achieved an 'equal opportunity' to participate up to the secondary level. Yet women still face barriers to participation at the tertiary level of education and questions remain regarding the goals of higher education for women.

The purposes of this study are: to trace the expansion of women's higher education in Japan under the influence of post-war egalitarianism; to explore the continuing disparity between men and women in the work force; and to assess the mechanisms that maintain traditional gender roles.

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The history of Japanese education for women: from the Meiji Era to the start of the Second World War

Beginning with the Meiji Restoration (1868), achieving Western-style modernization became Japan's ultimate goal. Since society prior to the Meiji era was so decentralized, Japan could hardly be termed a nation-state. After 300 years of seclusion, Japan suddenly faced the challenge of opening its doors to the outside world and becoming 'modern'. The belief in *Fukoku Kyohei* (a rich country with a strong army) prioritized the strengthening of the national economy above all other matters. The visits of a number of Meiji leaders (such as the Prime Ministers Ito, Kido and Iwakura) to Europe and the United States of America strengthened the conviction that national security came from superiority in the fields of industry and technology, where Japan lagged behind the West. To proceed with modernization, the Meiji leadership saw education as an effective means of mobilizing the talents of the people to promote the unity and strength of the nation-State. Education would lead to the acquisition of useful skills by the population.

Governmental policy toward women's education during the Meiji era was closely associated with the issue of rapid modernization. The first public girl's school at the secondary level was established in 1872 with the support of the Ministry of Education. Reflecting the Meiji government's efforts to import Western culture and systems, this school offered English classes and other Western-related subjects. Simultaneously, sewing, home economics, music and moral education—the traditional subjects for Japanese girls—were also offered. Following the first curriculum reform in 1875, a wide variety of classes gradually began to be provided, including physics, history, mathematics, chemistry, composition, law and English.

Following the Educational Act of 1879, which prohibited co-education above the elementary school level, the ideology of male predominance became prevalent. The promulgation of the Family Law (1897) firmly established a patriarchal and patrilineal family system. The patrilineal succession rules brought into effect by the Family Law subordinated women. Thus, the Family Law changed the Westernized women's education back into the more traditional Japanese education, emphasizing rigid gender roles and practical home-making skills like sewing and cooking. This strengthened the patriarchal system both in ideology and practice.

Murata (1990) argues that women were thus disadvantaged in regards to educational opportunity. Girls were not expected to pursue 'useless' academic-related subjects beyond the secondary level. The Girls' Higher Education Act, established by Education Minister Inoue in 1899, officially stated and acknowledged the purpose of women's education in Japan. Girls were to be educated to become good wives and good mothers. This became the ultimate goal of women's education throughout the nation. Despite the widely accepted notion that 'it is best for women to be simple', a small number of universities gradually accepted women and a small number of women's colleges were established.

'Post-war' educational reforms (1945–50)

The General Headquarters of the United States' occupation force issued five directives for reform aimed at establishing women's equality and (ultimately) their complete liberation. Accordingly, the Ministry of Education promulgated a programme for reorganizing women's education in 1945. Following the accomplishment of female suffrage, the improvement of women's position in higher education became imperative. Graduates of the higher teacher training schools for women and the upper levels of girls' high schools became qualified to take the entrance examinations to universities. Co-education at the university level was achieved in 1945.

In accordance with the new Constitution, which legally recognized equality of educational opportunity, the Fundamental Law of Education was proclaimed in 1947. A major educational reform was enacted which promoted co-education, six years of elementary and three years of junior high-school compulsory education, as well as a major transformation in the substance of the curriculum.

Narumiya (1986) argues that, despite these post-war educational reforms, most higher education institutions for women did not ameliorate the social status of women. She points out that the majority of women's higher education institutions were privately run and not financially supported by the government. The pre-war stratification of universities still existed, even after the reform. Most private universities and colleges had a lower status than the more prestigious national universities. Further, Narumiya argues that the focus of these institutions on literature and domestic sciences, taught in conformity with the traditional family-oriented ideology of 'a good wife and a good mother', limited women's chances to obtain advanced professional training.

Economic growth and the increase of mass higher education (1951 to 1975 and after)

There has been a steady rise in the proportion of both young men and women completing compulsory education and entering tertiary education since the end of the Second World War. The growing prosperity of the Japanese people, especially the unprecedented economic growth of the 1960s, contributed to the growth of education. Between 1959 and 1968, national income grew an average of 10% per year. The 'nuclear family' became the predominant family model and families tended to have fewer children. In this social milieu, families had the financial resources to educate daughters as well as sons.

At the same time, the post-war public education reforms initiated by the government contributed to an increasing number of women students at both the upper secondary and compulsory levels. In particular, mass education under the egalitarian ideology spread widely in society from 1955. Tables 1 and 2, as well as Figure 1, demonstrate that the percentage of female students entering both four-year universities and colleges, as well as junior colleges, has steadily increased since

1950. In 1969, higher education for women reached the stage of mass education. In particular, by 1975 the rate of women entering junior colleges had increased six-fold and, since 1950, women entering four-year universities and colleges has almost increased six-fold.

TABLE 1. Percentage of the population entering four-year universities and colleges, by sex.

Year	Male	Female
1950	13.7	2.5
1970	27.3	6.5
1975	40.4	12.5
1980	39.3	12.3
1990	33.4	15.2
1991	34.5	16.1
1992	35.2	17.3
1993	36.6	19.0
1994	38.9	21.0

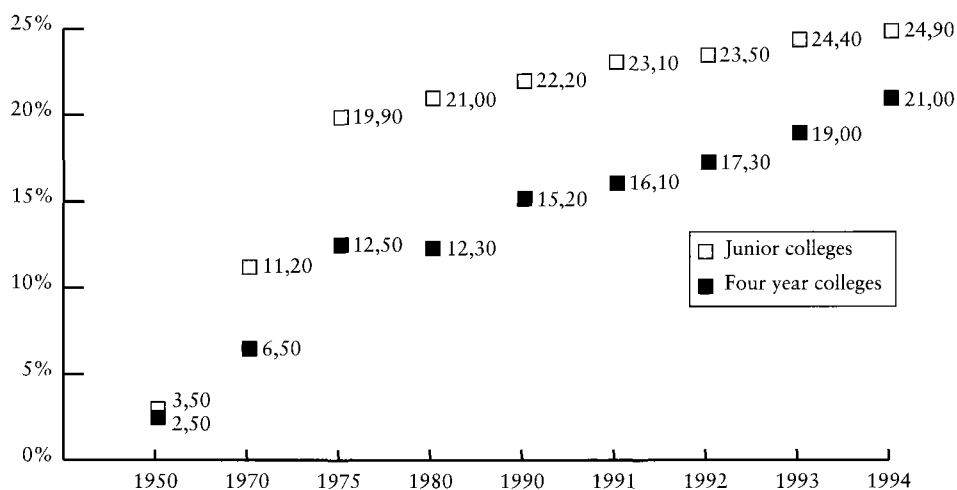
Source: Japan. Ministry of Education, Science and Culture, 1994.

TABLE 2. Percentage of the population entering junior colleges, by sex.

Year	Male	Female
1950	1.2	3.0
1970	2.0	11.2
1975	2.6	19.9
1980	2.0	21.0
1990	1.7	22.2
1991	1.8	23.1
1992	1.8	23.5
1993	1.9	24.4
1994	2.0	24.9

Source: Japan. Ministry of Education, Science and Culture, 1994.

FIGURE 1. Percentage of women entering higher education.



Source: Japan. Ministry of Education, Science and Culture, 1994.

The disparity between male and female students in higher education

Since 1989, the percentage of female students entering higher education institutions has exceeded that of males. But, it should be noted that most female students are still absorbed by junior colleges. An imbalance still exists between the number of female and male students in four-year universities and colleges. On average, female students attend higher education institutions for less time.

In 1991, approximately 2.7 million students enrolled in universities and colleges. While roughly 1,580,000 male students entered four-year universities and colleges, only 625,000 females did so. The percentage of female students studying at four-year universities and colleges was approximately 28% (see Table 3). Moreover, in 1987, ninety-three out of a total of 475 institutions were four-year institutions catering solely to women, and many female college students were enrolled at these exclusive women's schools. On the other hand, over 90% of the students who entered junior colleges were females (see Table 3). Thus, we can assume that even after the period of growth in education, most female students still enter junior college.

TABLE 3. Student distribution by sex and type of institution.

	Number of universities	Total number of students	Male students	Female students	Female proportion
Universities	592	2,205,435	1,580,287	625,148	28.3%
Junior colleges	514	504,097	42,285	461,812	91.6%
Graduate schools	n/a	99,650	81,823	11,413	17.1%

Source: Japan. Ministry of Education, Science and Culture, 1991.

Japanese junior colleges have functioned to train young women to become skilled, gracious and responsible homemakers (Sodei & Yano, 1987). In 1964, junior colleges were given permanent status as higher education institutions and had a different purpose than four-year universities and colleges. Demands from society and industry were the underlying factors promoting the establishment of junior colleges. Society required institutions in which girls could finish their education before reaching a marriageable age. Also, junior college graduates provided a convenient labour force for industry. Most of the jobs offered to these graduates were clerical, formerly filled by high-school graduates. Most junior college graduates elected to stay at home after marriage.

With regard to programme selection, female students at four-year institutions were likely to enrol in such traditionally female fields as the humanities, education and home economics (Murata, 1990). A survey conducted by the Ministry of Education in 1994 reveals that 33.4% of female students majored in humanities in comparison with 7.8% of male students. On the other hand, 4% of female students majored in science and engineering, while about 30% of male students majored in these courses. The results show that female students still concentrate on fields which are of little relevance to the job market.

The egalitarian transformation of Japanese education after the Second World War

Since the first post-war educational reform in 1947, the purpose of Japanese education has been to promote equity. Thus, a meritocratic approach has been dominant in an attempt to reduce the impact of social background and established social inequalities. Simultaneously, extensive educational reforms have been implemented with the intention of contributing to an egalitarian social transformation. Cummings (1980) states that whereas social structure in Japan in the late 1930s was exceptionally hierarchical, by the 1970s it had become much more inclusive and participatory. He claims that by the mid-1970s, Japan's income distribution was one of the most egalitarian among advanced industrial societies. The most notable co-variant of this egalitarian shift was the emergence of a new education system, rapidly expanding in scale, which openly promoted a more equal and democratic orientation. The educational reforms aimed to challenge established hierarchies and equalize them. Thus, these reforms strove to provide an environment in which both men and women would have an equal opportunity for higher education.

The post-war Japanese government has reduced inequalities in public education through its policy of equal educational expenditure. Thus, at the compulsory level, there is virtually no variation among prefectures in their annual operating expenditure per student. The other major element in achieving equity is an egalitarian and participatory curriculum at school. The national, unified curriculum up to the junior high school level is designed to develop both the cognitive skills and motivation of all students, regardless of their individual innate ability. This egalitarian curriculum transformation has substantially increased women's educational attainments.

Henry Levin (1976) refers to four criteria to assess equality of educational opportunity. First, there is equal access to the education system, characterized by the criteria of admission, curriculum, financial support and geographical location. Secondly, equal participation is needed and can be operationally defined by teacher instruction, family expectation and rates of grade-repetition, drop-out and final graduation. Third, the results of equal education are defined by competency documented by examination results. Lastly, the equal educational effects on life chances are defined by position and social status after the completion of formal education. Based on these four criteria, the post-war reforms achieved a certain level of equal opportunity for girls—but only up to the upper secondary level. This is exemplified by the realization of mass education since the 1960s. But gender differences in higher education persist. Not only does the overall enrolment of women in higher education lag behind that of men, there is also a significant disparity in the selection of courses and majors. The proportion of female students enrolling at four-year universities and colleges is comparatively low, thus limiting their access to higher status managerial and professional occupations.

Fujimura (1985) argues that the patterns of women's college attendance and selection of courses are closely associated with the persistence of the view that educating daughters has both different objectives and is less important than educating sons. She points out the ideology that the reason for educating girls is to prepare them to be better wives and mothers. Accordingly, maintaining different gender roles and distinct socialization patterns based on gender still negatively affect the second aspect of 'equal participation' in higher education.

What about the fourth aspect of 'equal educational effects on life chances'? In other words, how does the status of women in the labour force compare with that of men? It is a generally held belief that societies with flexible employment options for women have sex ratios in educational institutions that closely approach parity (Giele & Smock, 1977). If so, sex ratio disparities in the education system might be a strong indicator of inequalities in the labour market as well.

In 1993, the Ministry of Education published the results of a survey conducted in the same year entitled 'Occupations of new four-year college graduates'. According to the survey, 34,000 new college graduates entered the labour market in 1993. About three-quarters (75.6%) of female students entered the labour market, an all-time high and only 0.9% lower than the number of male students who entered the labour market (Japan. Ministry of Education, Science and Culture 1994). This shows the remarkable expansion of job opportunities for female students at the entry level. These statistics imply that the effect of equal education at the entry level has been to bring parity. But the question remains, do Japanese women really experience equal opportunity?

The relationships between education and post-school labour market experiences

In 1986, Bowmen and Osawa investigated the differences in hourly and monthly wages of women and men. Their results demonstrated that women who had completed upper-secondary schooling suffered less disadvantage in earnings relative to their male counterparts than women with only compulsory schooling or less. Also, Bowmen and Osawa argued that the gender gap in earning power diminished when the educational level was higher. However, there is a clear overall gender gap in earnings. For example, women who had graduated from four-year universities and colleges in the age group 25–29 earned only 89% of male graduates in the same age group. The disparity between the monthly earnings of men and women in the 30–59 age group is relatively high. Women in the age group 50–54 who had graduated from junior college earned only 63% of men in the same group. This result is supported by a government survey. The survey, conducted by the Ministry of Labour in 1993, shows that average income per month for women in the entire labour market only accounts for 50% of that of males (Japan. Ministry of Labour, 1994).

Fujimura (1985) argues that the correlation between educational background and occupational mobility for women is much weaker than that for men. Despite

the fact that an increasing number of women with higher education backgrounds wish to secure professional employment, they still lack equal access to professional careers, thus their mobility and advancement are severely restricted.

Table 4 indicates that in the public sector, the higher the administrative rank, the fewer the number of women. Women's advancement in public service to administrative positions is still limited.

TABLE 4. The number of public servants (administrative office) by sex in 1991.

	Highest										Lowest	
Rank	11	10	9	8	7	6	5	4	3	2	1	Total
Women	11	14	29	272	973	3548	3210	7225	9747	5363	5631	36023
Men	1436	1963	3804	17981	16679	30016	19858	34598	36204	18395	14859	195793

Source: Japan. Ministry of Education, Science and Culture, 1991.

Mechanisms maintaining traditional gender roles for women in higher education

As described above, the history of higher education for Japanese women shows that the egalitarian transformation after 1945 greatly contributed to increase the number of female students enrolled in higher education. On the other hand, there exists a clear gap between men and women regarding the effects of equal education on their life chances. Amano (1986) presents another mechanism—push and pull factors—on male and female students. The increase in the Japanese gross national product (GNP) in the 1960s led to more affordable schooling and eventually resulted in an overall enrolment increase in higher education. Amano identifies this mechanism as the 'push factor'. The 'pull factor' implies that an increase in GNP produces more job opportunities in the labour market for college graduates. However, this push-and-pull mechanism describes the development of female higher education and differs from that of men's. It is assumed that since the growth in the labour market for female graduates was relatively small, the enrolment increase of female students in higher education was mainly derived from the push factors—i.e., each family had the available financial resources and a transformation of social norms for enrolment in higher education had taken place.

As Clark (1981) points out, higher education has been a social structure for the control of advanced knowledge and technology. In other words, higher education has been a way for a society to pursue the creation of knowledge and cognitive rationality (Parsons & Platt, 1973). Knowledge, rationality, learning, competition and intelligence were each prioritized. Thus, Parsons and Platt state that higher education is geared to integrating four functions: research and training for future researchers; teaching through liberal arts education; professional training and education; and cultivation of critical thinking skills.

However, women's higher education in Japan does not fit this model. Rather, Japanese higher education for women has only been fulfilling two functions—namely providing a liberal arts education and professional training and education (Amano, 1986). These two functions of women's higher education are both explicitly and implicitly different from those of men's. Amano finds the following three basic faults with women's higher education.

First, she argues that at junior colleges, education stereotyped by gender is still generally the norm. This is evident through the reproduction of a status culture for specific social stratification through teaching the role of a middle-class wife and mother. In particular, pre-war women's higher education reproduced the status culture through the humanities, home economics and related subjects. The status culture was rigidly fixed in a patriarchal and patrilineal 'Ie' system.

Second, the basic function of a liberal arts education is to provide each learner with intrinsically rewarding experiences that are conducive to personal liberation and development. The goals of education are dynamic, personal processes related to the ideals of personal growth, integrity and autonomy (McNeil, 1990, p. 6). However, women's higher education in Japan has not expedited self-actualization; rather, it has forced women to adapt themselves to the social norms of women's role in society. Simultaneously, liberal arts education for women has not laid the foundation for professional education.

Third, professional education itself is so limited for women. Professional education in Japan prepares women only for the traditional jobs of teaching in elementary education or nursing—professions which generally reinforce the expressive family role or gender role. Thus, women's higher education in Japan has served the social function to reproduce and fix gender roles through discriminatory 'knowledge' distribution according to gender.

When we look at the relationship between higher education and gender roles, we should carefully examine the meaning of the gender-based academic career. Success for men implies occupational achievement which is directly associated with social status. There is a clear link between men's academic careers and their occupational achievements and social status. Kondo and Watanabe (1990) conducted a longitudinal study of the relationship between men's ascribed social status, their academic career achievement and their social status. Their study corroborated the existence of a meritocratic effect of an academic career on male occupational or social status achievement. Their empirical study shows that while there is a scant relationship between ascribed status and occupational achievement, an academic career is the strongest determinant of men's occupational achievement regardless of their ascribed social status. Even though variables such as father's academic career and occupational status were included in this study, the academic career still remained the strongest determinant for men's occupational achievement. Thus, Kondo and Watanabe conclude that the academic career has consistently been the controlling factor in determining men's social status in Japan. However, the effect of the academic career of women is different. The academic career of women is not necessary relevant to their occupational success or social

success. Rather, an academic career has a 'symbolic value' in a society like Japan's which consists of association groups that share sub-cultures. The symbolic value of the academic career of women is particularly important when finding a marriage partner. The purpose of pre-war higher education for women was to prepare women for marriage with men belonging to a specific status group (Amano, 1986, p. 51). Hence, the growth of pre-war higher education for women from 1920 to 1935 did not aim to develop their education as professionals but to produce 'wives and mothers' of the target status group. The academic careers of women function to obtain 'status-borrowing' through marriage with men in the target status group.

In 1990, Shimizu conducted a study on the relationship between academic career, marriage and maintaining stratification. His research focused on factors that maintain stratification through marriage. He found that the academic career of the husband and wife are extraordinarily compatible. In other words, the results indicated homogamy between couples with the same academic career, and also that wives tended to have lower academic careers than their husbands. Women's status mobility was possible through marriage.

Women's status mobility through marriage was also confirmed by Shiina's research (1990) on the relationship between academic career and marriage. Confirming the homogamy among college graduate couples, the results of his study also supported the existence of upward mobility of women through marriage. More than 60% of female junior college graduates married college graduates. It can be concluded that the effect of the academic career of women helped to acquire status through marriage.

Conclusion

The 1947 education reform and mass education after the period of high economic growth have greatly influenced women's higher education attainments. These changes are beginning to transform women's views towards education and more women with higher education attainment are entering the labour market.

However, as previously indicated, many obstacles to equal opportunity and results in the labour market still remain for women. Higher education for women has never had the same social impact as that for men. So far as the academic career of women is regarded as having 'symbolic value'—it has a close relationship to marriage in Japanese society. Women's higher education is a social way of maintaining a sub-culture and traditional gender norms.

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